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COMPETITIVENESS OF THE U.S. CHEMICAL INDUSTRY

HEARING

BEFORE THE

SUBCOMMITTEE ON FOREIGN COMMERCE AND TOURISM

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

SECOND SESSION

ON

THE COMPETITIVENESS OF THE U.S. CHEMICAL INDUSTRY

JUNE 1, 1988

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COMPETITIVENESS OF THE U.S. CHEMICAL INDUSTRY

WEDNESDAY, JUNE 1, 1988

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
SUBCOMMITTEE ON FOREIGN COMMERCE AND TOURISM,
Charleston, WV.

The subcommittee met, pursuant to notice, at 10:00 a.m. in the Maroon and Gold Room, Geary Student Union Building, 2300 MacCorkle Avenue, S.E., University of Charleston, Hon. John D. Rockefeller IV (Chairman of the subcommittee) presiding.

Staff members assigned to this hearing: Loretta Dunn; Sally Susman, professional staff members; and Mark Farrell, minority professional staff member.

OPENING STATEMENT OF SENATOR ROCKEFELLER

Senator **ROCKEFELLER**. The hearing of the Senate Subcommittee on Foreign Commerce and Tourism is called to order. I want to make a brief statement and then we'll proceed right with the witnesses. I hope this is going to a very productive morning. I believe it will be.

Obviously, I am very pleased to be here today to chair this Senate hearing on an issue of great importance to the country and of particular importance to West Virginia, and that is the competitiveness of the U.S. chemicals industry.

Chemicals are a way of life and a necessity of modern day living for all America, and for thousands of West Virginians a livelihood.

From the Kanawha Valley to Parkersburg and along the entire Ohio River, to Morgantown, to Martinsburg, West Virginia the economy depends on this vital industry.

The chemical industry is one of the world's largest industries, with sales of 500 billion dollars on a worldwide basis. It is the third la9ds the world, and is a key component of America's industrial competitiveness.

Unlike steel, cars, consumer electronics, and a host of others, this industry remains at the cutting edge and is still ahead of the competition from Japan and other Asian nations.

The chemical industry is one of West Virginia's two main economic lifelines, along with coal. The industry employs almost 16,000 West Virginians and 4,000 of them are involved in exporting.

The total value of shipments by the West Virginia Chemical Industry was just under 4 billion dollars in 1985, which is the last year that statistics are available. And approximately 25 percent of that 4 billion dollars was for export, which means a billion dollars of chemicals were exported from West Virginia. And that is something most of our people do not know, even in our own state.

Conditions have been difficult. The chemical industry faced the oil price shocks of the 1970's, and the worst recession since plastics and petrochemicals became a big business.

Yet the industry has more than coped, it has prospered because of it's relentless commitment to research, and to development, and new products.

Our leading companies have diversified their efforts moving from bulk to specialty chemicals. They have come up with new corporate strategies and new structures often thinning the ranks of management.

They have managed to reap the benefits of cooperation while still competing and that's a balancing act that is characteristic of some other nations, but that we in the United States have particular difficulty in mastering.

Given the disastrous impact of the over valued dollar on U.S. industries, the chemical industries trade surplus, which was almost 8 billion dollars in 1986, and over 10 billion dollars in 1987, has been nothing short of astonishing, and a great testimonial I might say to the strength of the industry.

There has been, however, it must be noted, some erosion, and future success is not assured. Chemical imports exceeded 16 billion in 1987, and have been growing by about 11 percent per year over the last 5 years.

In contrast, exports have been growing by only 6 percent yearly over that same 5 year period. Those trend lines are plainly dangerous and are probably worth talking about.

Other nations have an understandable interest in developing their chemical industries, but it cannot be at the expense of our own. We in Government need to keep working and fighting to insure that those foreign markets remain open to our world class exports.

Overall, the chemical industry stands as a bright spot on the industrial landscape of America, and we can learn some important lessons from the industry's success.

The Subcommittee on Foreign Commerce and Tourism, which I chair, has come here today to learn from this success story of the U.S. Chemical Industry and to learn what you regard as some of your problems now and in the future. I'm eager to hear your views. I'm eager to learn from you about the strength of your industry, about what you may consider weaknesses and your prospects for the future and what Government can do, and what Government ought not to do to strengthen your industry further.

With that, what we are going to do is we're going to have two witnesses. We're going to have Michael Kelley, the Deputy Assistant Secretary for Basic Industries, the Department of Commerce as a sole witness first. And then, we'll have Dr. Allen Lenz with the Chemical Manufacturers Association. And then we're going to have the four local chemical folks as a panel. And then, after that Joe Powell, President of the AFL-CIO.

So, Michael Kelley, if you would come forward, we would be glad to hear from you. We have a little light system over here, which we use all the time in the Senate, and we're fortunate to have Senate people with us this morning from the Commerce Committee.

You've been told and I think you've agreed in principle to limit your comments to 5 minutes. Sometimes, principle doesn't become practice. So, that's why we bring along a light, a gentle light, only a gentle light.

I'm delighted to have you, sir.

STATEMENT OF MICHAEL T. KELLEY, DEPUTY ASSISTANT SECRETARY FOR BASIC INDUSTRIES, DEPARTMENT OF COMMERCE; ACCOMPANIED BY VINCENT KAMENICKY, DIRECTOR, OFFICE OF CHEMICALS AND THE BASIC INDUSTRY SECTOR INTERNATIONAL TRADE ADMINISTRATION; AND ROGER FORTNER, DISTRICT DIRECTOR

Mr. KELLEY. Mr. Chairman, thank you for inviting me. First of all, let me introduce the person to my right. His name is Vincent Kamenicky. He is the Director of the Office of Chemicals and the Basic Industry Sector International Trade Administration, U.S. Department of Commerce. My name is Michael T. Kelley, I am Deputy Assistant Secretary for Basic Industries, International Trade Administration, U.S. Department of Commerce, and behind me, I have Roger Fortner. Roger, if you will stand up for a minute. Roger is the District Director in Charleston for the U.S. Department of Commerce and also, from Baileysville, West Virginia. So, we have a real West Virginian representing you here in Charleston.

Senator, let me thank you for all the help you've given one of my other areas of responsibility the coal industry. Especially in the U.S.-Japan Energy negotiations, you've been very helpful in obviously helping us convince the Japanese Government on the need for maintaining certain levels of U.S. coal exports to that country. I hope you keep the work up, because the job is an ever ongoing with our friends and allies from Japan. But again, I want to thank you very much for that aspect of it.

West Virginia is obviously a state that's of dear concern to me because I have the basic industries area, and I can be proud to say that right now the basic industries are looking very good. Contrary to the belief of a lot of economists that the service industry was going to be the "end all and be all" of America. The manufacturing base and the basic industries base is coming back. And in West Virginia, that means coal, that means chemicals, that means pulp and paper, and that means steel.

Believe it or not, we're actually exporting steel out of the United States right now. So, I think there is some very bright aspects.

But today, I want to report on the state of the U.S. Chemical Industry and what the Government might do to increase its competitiveness.

I note that last year the State of West Virginia exported an estimated 25.7 million short tons of coal and over 1 billion dollars worth of chemical products. While the information and comment I provide today may give you insights to the future, the essential message to you, is that you must be doing something right. Keep it up.

The U.S. Chemical Industry employs 1 million people, about 5 percent of the total U.S. industrial work force. It includes organic, and inorganic chemicals, pharmaceuticals, fertilizers, biotechnological products and advanced materials. It is the most multinational of the multinationals with over 20 billion dollars invested in foreign plants and equipment.

Because of growing environmental concerns, it is the most regulated of all of our industries. Despite the hazardous nature of some of its products, it has the best worker safety record of the U.S. industries.

The U.S. Chemical Industry is the most intensive when it comes to research and development work with the extensive R and D work it can also be called the most innovative, especially the pharmaceutical sector. And most note worthy with our National Trade deficit of 171 billion, the U.S. Chemical Industry has historically maintained a trade balance surplus. Last year it was 9.3 billion dollars. So, what do we have to worry about?

The U.S. Chemical Industry is energy intensive. Petroleum is used both as a feed stock and as a energy source. In some sectors energy and feed stock costs can constitute 20 percent of our final product costs. In other sectors the energy feed stock runs as high as 70 percent of the final product.

Then, recognized petroleum is used both as a raw material and as an energy source. Petroleum is traded in the international market place as a commodity. That is, it's price is determined by demand.

So, the more expensive we make a raw material or energy source for our producers, the more expensive and less competitive will be our American product.

This is why we oppose any form of surcharge or oil import fee on petroleum. I'll repeat that again. We oppose any form of surcharge or oil import fee on petroleum.

The pharmaceutical, biotechnology, pesticides, and organic chemical producing industries are heavily regulated for environmental and health reasons.

Efforts to make these products safe to manufacture, safe to use, and safe to transport and store costs millions of dollars annually. These environmental costs add to production costs and eventually appear in the products price.

Looking at environmental issues this way, we must recognize that environmental safety affects the competitiveness of american products in the global marketplace. Looking at environmental issues another way, we must recognize that if the problem exists outside the United States, our protection measures will rectify the problem only within our borders. Global environmental problems require global solutions.

These bigger environmental issues will affect us more in the future as other countries come to share our concerns. It is time that we calculate the additional expenses of environmental safety costs, and issue trade competitive impact statements when we issue environmental regulations.

The largest loss the U.S. Chemical Industry suffers comes from violations of intellectual property rights. U.S. negotiators are working to correct this problem with the Uruguayan round of multi-national trade negotiations under way in Geneva. We have also addressed this problem in the Free Trade Agreement with Canada.

In time when politics and the economy permit implementation of corrective actions, we shall address the problem with Mexico. But in the meantime starting today, it is time to do something to make our trading partners aware that we will not tolerate infringement of our patent protections.

A good first step, is the elimination of the generalized systems of preferences benefits, an example, lower tariffs, developing countries enjoy when they do not honor our intellectual property rights.

Extremely promising areas for industry exists with biotechnology and advanced materials. However, biotechnology advances are running into problems with groups properly concerned that altered genes or molecules are not released to the atmosphere where they can never be recalled. This problem is different than defective products, but must be resolved.

Advanced materials probably constitutes the wave of the future, but so far the market place is driven by aerospace and defense needs. We need to see commercial application and we need to see basic research brought into production quickly before this industry shows a return on the investment.

All these ideas are promising for the future of the U.S. Chemical Industry. The key ingredient to a successful future rests with improved U.S. education. We must improve to produce thinkers, innovators, and scientists for this industry to maintain it's track record to date.

Restraint on time keeps me from expanding on these ideas, but I suggest that you review my written testimony, which at this point I would like to submit for the record.

Thank you for this opportunity to address you about this very important issue, which permeates the very way you live, eat and work.

Senator **Rockefeller**. Thank you, Secretary Kelley. I appreciate your thoughts.

I might just start out by asking you what your understanding of the condition of, or engineering capacity in our education system is? We read that 60 percent of people who get Ph.d.'s are not American, and there's nothing wrong with that. But most of them go home, or a lot of them go home. What do you consider to be the state of education in this country and, well, you won't be able to answer in this state, in terms of turning out people who are properly trained to do the research and development, which you depend on.

Mr. **Kelley**. I think basically we are in a very depressed state as far as our engineering capabilities are in this country. I just got back from Beijing and one of the real hot topics of debate in Beijing is they have had 30 thousand students here in the United States studying in various American universities. Most of those students are studying in what we would call high tech or engineering areas, or biological sciences, or chemical sciences in advanced material areas.

And the biggest problem in Beijing was, at least when I was there back in March, was that of the 30 thousand that were over here, only about 8 thousand have returned home. Most of them are staying here in the United States. That's a good point it helps us.

Senator ROCKEFELLER. That's good.

Mr. KELLEY. But the bad point is, that you're seeing this to be very frank with you, in our school systems. That is the recent immigrants, the Asian community, and the other ones who are moving into this area while the older citizens in the United States are not taking these types of science courses.

When you get down to grade level courses, and I have a daughter 13 years old, who is in the seventh grade, they come home and they like history, and they like English, and they like music, and they like Phys-ed, but when you talk to them about mathematics, and you talked to them about science they're bored.

We have a real problem. And the problem is that the chemical industry is a high tech industry. When I say, I represent the basic industries, the biggest fallacy in this country has been that the basic industries are the "Youngstown Syndrome" and the Rustbelt areas. The problem is that most of our real high tech development that's taken place in this country has come out of our steel industries, our aluminum industries, our chemical industries, even our wood products industries. That is where the basic research has been done. And, we are eroding that base.

So, yes, I think that the educational system has a lot to answer for, I think Secretary Bennett has made that quite clear in a lot of the addresses that he's made over the last 2 or 3 years. I think it's a serious problem. I think a lot of the chemical industry, and I've heard a lot of discussion from DuPont Chemical Company and some of the other companies talking about this problem as being a very, very serious problem.

Senator ROCKEFELLER. Chemical industry by and large is supportive of the free trade agreement with Canada.

Mr. KELLEY. Yes, sir.

Senator ROCKEFELLER. Can you explain why that is the case?

Mr. KELLEY. We have, as you know, 14 ISAC's set up under the Industry Sector advisory process that was set up by Congress. The chemical ISAC is ISAC Number 3 which basically has the representatives of all of the major chemical sectors in the United States.

The basic reason that they feel the Canadian agreement is going to be beneficial to them is two fold. Number 1, the energy sector agreement of that area allows, for the first time, free trade and movement of natural gas and oil between Canada and the United States without restrictions, without price setting. As I said earlier in my testimony, energy is probably one of the major raw materials, especially oil and gas, for the U.S. Chemical Industry. It gives us a secure access. It gives us the ability to take basic raw chemicals out of Canada, do value added on them and ship back to Canada value added products which helps in the trade deficit area.

It also, basically, if you look at the U.S. Chemical Industry about 30 percent of that industry now is foreign owned. The U.S. owns about 30 percent of the Canadian industry. So, what we are really talking about is really no borders existing, from a marketing point of view, between Canada and the United States in the chemical area.

Now, there will be safe guards, Mr. Kamenicky points out that in 1967 we did 12.6 percent of our exports in chemicals went to Canada. So, that's a pretty significant number and 18.2 percent came in but, when you look at those percentage numbers, when you look at the dollar numbers, the U.S. figures were much higher vis-a-vis Canada exports versus U.S. exports. But, when——

Senator ROCKEFELLER. Oh, I see that Europe is by far your largest export market, Western Europe.

Mr. KELLEY. Right. That's correct.

Senator ROCKEFELLER. With Asia coming behind that, Japan about 14 percent.

Mr. KELLEY. Japan and Asia probably will be major growing markets for us.

Senator ROCKEFELLER. Yes.

Mr. KELLEY. Well, let me point one other thing out in the Canadian area. We think there are safeguards in the agreement so there will not be an opportunity for foreign chemical companies not already in the Canada to go into that country, get subsidies from one of the Provinces or one from the Canadian Government to locate there, and then use that to bounce in through the border. We think there's enough safeguards in that area to prevent that from happening. Not only in that area, but we also see them in pulp and paper and in steel, and some of the other industries.

Senator ROCKEFELLER. You make reference in your testimony to, at some point, relaxation of anti-trust laws so as to——

Mr. KELLEY. Law research and development?

Senator ROCKEFELLER. Yes, to allow consortia.

Mr. KELLEY. Yes.

Senator ROCKEFELLER. And that is something which is an increasing phenomenon. Please describe some of that for me.

Mr. KELLEY. Well, as you know——

Senator ROCKEFELLER. In this country.

Mr. KELLEY. We've already done some of that in the computer chip technology areas. In the project that is going on down in Austin, Texas right now we are trying to develop a new form of computer chip, advanced computer chip. We are doing it with super computers now and we now are talking about material producers getting together, that is advance material producers and forming some type of a consortium in that particular aspect. We think that is some good opportunities, especially in the higher end of the chemical area for joint R & D activity areas, specifically, biotechnologies, and in the advance materials area.

Advance materials here is probably the area least understood and is the area that probably makes me the most nervous. It's the area where we have developed the technology and the research base and where we are not commercializing it. It's the Japanese that are commercializing. Most people don't realize that in the ceramics area alone, 90 percent of the ceramics that are used in the defense area basically come from Japan, they do not come from the United States.

Senator Rockefeller. Well, let's talk about that, then. Why, I mean, it's one thing when you talk about consortia that get, I happen to think that advanced ceramics are not only an incredible loss of commercial opportunity for this country if we don't take advantage of it but, I agree with you that we are way behind, that we have universities that do good work, we have some companies which are making some commitment to it but that in the case of, let's say, of General Motors, the automobile industry, they have been doing research for a long time but, you don't find advanced ceramics in their engines.

Mr. Kelley. Yes. Well, you do find them in the engines. You are talking about the ceramic engine, no, it is not there. If you are talking about various ceramic parts, yes, they do have some in there.

Senator Rockefeller. They have some, right?

Mr. Kelley. Yes.

Senator Rockefeller. But, it is very, it's much less, I believe than one would think after 6 or 8 years of research. Why do you think that is the case on ceramics when that's such an obvious block buster in the world's technical and commercial future?

Mr. Kelley. I think that it goes back to the mentality and may even refer back to the question you asked earlier on education. The United States to put it in baseball terms, likes the home run. So, you make a major discovery, like on super conductivity, like IBM discovered a little while back on super conductivity. All super conductivity is in the materials, by the way, it's nothing really earth shattering. All it is is materials and how you formulate the material. We like that big home run. The Japanese, on the other hand, are singles hitters. They like to hit the single, steal first or steal second, steal third and then get bunted home. But, they are willing to spend enough time to try and develop these type of commercial markets. They are willing to not take as big a profit in some cases, to develop those long range type of markets.

We think, and especially in the ceramics area and the advanced materials area that you're going to probably see other countries move much quicker. When you get into Star Wars and some of those questions of research, really all Star Wars is is advanced materials. The reason I think Japan and Germany wanted to get into SDI isn't so much because of the development of that system, it's the research and the technology that spins off of that system.

Boeing signed an agreement with Japan for their new 7J7 aircraft which is going to be a high tech airplane. There's a lot of advanced materials and technology in it, 25 billion dollars. I think that the spin off of technology from just the materials area, that Japan will get out of that could be well above the 25 billion that U.S. gain on the agreement.

So, I think what Japan is seeing again is not a narrow focus of getting a real big bang research project going but, it's taken a longer term look in developing those type of research projects into consumer goods.

Consumer goods is where you make money. Defense production and space production is nice but, it's a one time project. Consumer goods is where you make money and, that's what the Japanese have understood.

Senator **Rockefeller**. There is a school of thought which says that American industry, as a whole, has made substantial adjustments through thinning of ranks and getting leaner and meaner and that kind of thing but that we tend to, that industry in this country tends to think that what you have to do is substitute machines for manpower and that means that you save labor cost and therefore you are becoming more efficient. Wherein, once you've done that you can't move much further. The other school of thought is that what you have to do is spend so much money on R&D that you are able to come out with new products and respond to customer and consumer wishes almost immediately and that technology changing over every 2 or 3 years in any event. Is the chemical industry, in your judgment, in this country, doing the first, the second, or both?

Mr. **Kelley**. I think it is doing both and probably because of the rationalization that's gone on in the basic industry sector over the last 8 or 9 years, we are now seeing the fruits of that particular aspect. But, one of the areas that you left out, you didn't talk about was product liability. That is a detriment to any type of innovation or development besides the manpower aspect and the research and development aspect, the legal structures are impinging on some of these industries, such as product liability, are causing some real severe problems.

Let me give an example. The Congress is going to probably start discussing, next year, if they don't discuss this year, RECRA, Resource Conservation Recovery Act. I think RECRA is probably the most important piece of environmental legislation that Congress will address as far as dealing with competitiveness of U.S. industry. Why is that? Superfund basically dealt with the chemical industry and the oil industry and it dealt with the back end of the manufacturing cycle, the areas dealing with waste that comes out of manufacturing and the dump sites, et cetera and rightfully so.

RECRA is going to deal with the front end of the cycle. These microphones eventually will become outdated and they have to go somewhere. Do they go to a sanitary landfill, do they go to a cogeneration plant or a garbage waste burning plant, do they get dumped in the ocean, what happens to them? They will eventually become a waste. And, one of the big factors that most people didn't realize as they berated the basic industries over all of these years, but we have destroyed, in this country, a basic recycling industry, the steel industry, the aluminum industry, the lead industry, the zinc industry, the copper industry, all of those industries that have moved out or closed down were a basically recycling industry. They handled a lot of this type of material that we're taking out. A computer, the big plastic covers on a computer, where are they going to go?

So, RECRA is a competitive problem and that gets you into the product liability problem. I'll dare say, here in Charleston, WV that your City Council, if they want to bury garbage in the landfill right now, they've got some problems. The local populous doesn't want it to happen. If they want to put a burning plant in, the people who are living around a burning plant don't want it to happen, so, what are you going to do with it? That brings in insurance and liability problem. Somebody is responsible for it whether it's state officials, local officials or industry officials and the industry officials are the ones that can't afford this sort of thing if they are going to be competitive in the international market place, especially if the overseas competitors will not do anything to deal with this. This is why I brought up the question that in the 1960's we had environmental impact statements. In the 1970's we've had economic impact statements. In the 1980's and the 1990's we've got to look at international trade impact statements because you cannot pass laws anymore that just deal with confinement within U.S. borders. Every time the Congress passes a law or the States pass a law it has an impact on the competitiveness of the industries that reside in those state borders or within the nation and then we've got to look at that.

Senator **Rockefeller**. What effect does the budget deficit and the trade deficit have on the chemical industry?

Mr. **Kelley**. Basically, the trade deficit has had probably very little on the chemical industry because they are a positive contributor to the trade picture here in the United States.

I would say that the budget deficit probably has an impact because it has driven up the cost of money and it's made it harder for companies to go into the market place and borrow money.

Senator **Rockefeller**. Should Americans be concerned that, about foreign acquisitions in terms of the chemical industry in this country or is that simply the way the world works these days and we're all going to have to get use to it, what is your view?

Mr. **Kelley**. I don't think that we should be concerned of foreign acquisition of the chemical industry because when you look at the chemical industry, 30 percent of the U.S. industry is now owned foreign. I mean, Dupont, for all intents and purposes is owned by a foreign company, the Broffman family. They are Canadians. They also own the, what is it, the coal company here, the big one, Consolidated, which is part of Dupont. But, I mean, the Broffman family is Canadian and it hasn't really had a impact on Dupont. I think that you see companies like Rhone Poulenl that have moved in here, they are going to provide jobs. I don't really have a fear for the chemical industry because the chemical industry is a high tech industry. In a high tech industry such as chemicals you need the research and the intellectual prowess that goes in the development of new technology, to help an industry expand and deal world wide.

Senator **Rockefeller**. Do you think that there's a difference at this point between the emphasis that foreign management puts on R&D and American management puts on R&D or what do you see as differences between the 2 styles of management, if they are any.

Mr. **Kelley**. I think that the Japanese, at least as far as the chemical industry goes, the Japanese and the European style of management is much more stultifying than the U.S. management and when you look at what, Moechat celanese, if you look very carefully at that take over by the German firm, it's the U.S. management that's 1 and 0 because they're more innovative, they can move quicker. That's one of the reasons why a lot of the foreign chemical companies are buying U.S. companies because they want to come inside here, they want to get this U.S. innovation in the chemicals.

Senator ROCKEFELLER. All right, you have an 11 percent increase now in imports over last 5 years——

Mr. KELLEY. Yes.

Senator ROCKEFELLER. As compared to a 6 percent increase in exports, is that something we, in fact, should be worried about or do you consider that a temporary phenomenon?

Mr. KELLEY. Let me, if I could defer on that question to Mr. Kamenicky, maybe he can clarify the percentage numbers a little bit better.

Mr. KAMENICKY. I think, far too often, the concerns are usually with the import. In the case of the chemical industry, we are importing more, yes, but, they are the commodity type chemicals imported for value added and getting down stream. So, we are importing more and more upstream products because of the price possibly, as well as production facilities and moving downstream.

Mr. Kelley.

Mr. KELLEY. I think that one of the areas that we've got to understand, again, going back to the energy question, China is going to expand their commodity chemicals. Russia has already cut some deals with both U.S. companies and Italian companies to expand their petrochemical complexes and the GCC in the Middle East has already started to look about how they can penetrate both Europe and the United States, it's a world market.

The reason that these areas are going to be able to do a lot of that in the commodity chemicals area is because they have a very basic, cheap, broad resource called natural gas and oil.

Senator ROCKEFELLER. All right, let me ask you a different question. The chemical industry, as a large exporter is very concerned about pre-shipment inspection programs. An ITC report in 1987 indicates that the cost to exporters for these programs averages $526.00 a shipment. The industry opposed a provision in the trade bill regulating current pre-shipment inspection programs and would prefer more competition in pre-shipment programs. What does the administration think should be done, if anything, about pre-shipment inspection programs?

Mr. KELLEY. Mr. Chairman, I probably would have to defer on that particular area because that's not an area of my expertise but, I would be glad, for the record, to answer that question.

[The following information was subsequently received for the record:]

PRESHIPMENT INSPECTION

About twenty-eight countries in the developing world have entered into contracts with foreign-owned private inspection companies which physically examine the quality and quantity of merchandise destined for those countries before shipment is made from the United States or other exporting country. These private inspection companies will also review the pricing and other financial aspects of those transactions for customs valuation purposes. In some cases, these private inspection companies also conduct inspection and pricing reviews of imports into the United States from their developing country clients after the goods have arrived in the United States.

If the private inspection company determines that the quality and quantity of the merchandise conform with the contract and with related specifications, and that the price is "acceptable" by private inspection company definitions, or is consistent with a "standard price" determined by the private inspection company on the basis of other export prices either in the country of export or into country of import, then it will issue a "clean report of findings". A "clean report of findings" is required (1) for the foreign importer of U.S. goods to obtain, in some cases, foreign exchange preferential "commercial rates" from his country's central bank; (2) before the central bank will make payment to the U.S. shipper/exporter for the shipment; (3) to comply with foreign import license requirements; and/or (4) to qualify for other requirements of, or benefits available in connection with, the foreign importation of merchandise.

The alleged purpose of these pre-shipment inspection and valuation arrangements is to protect unsophisticated buyers in developing countries in their dealings with foreign exporters, to ensure that developing country imports are assigned the proper valuation for customs assessment purposes, and to prevent the flight of capital from developing countries (through deliberate over invoicing of imports from developed countries).

Industry contends that pre-shipment inspection practices are in violation of Article VII of the General Agreement on Tariffs and Trade (GATT). We are pursuing this issue in the Uruguay Round in the Non-Tariff Trade Measures Group. The Department of Commerce has also discussed pre-shipment inspection problems in numerous bilateral discussions with developing countries. We have recently received reports that some developing countries are not renewing their contracts with pre-shipment inspection companies because they were dissatisfied with the services provided.

Senator ROCKEFELLER. That would be very good. Let me ask one final question, it's already a little after 10:30, you reflected on intellectual property right violations, could you give me a couple of examples of that?

Mr. KELLEY. Yes, sir. The best example that I have was in pesticides in Brazil, that was the first. The second one that just came up is in China right now with the pharmaceutical industry. Basically, what they have done, is that once, a company signs an agreement, and Brazil is a good example in pesticides and herbicides, they sign the agreement then the Brazilian Government came up with a new regulation that makes them print their chemical formula, which is usually highly protected by the chemical industries, on the container. This then allows the government and the Brazilian companies that are not aligned with this company to copy that particular chemical formula and once they copy it, it's pretty hard to pull back and if they don't have any type of patent agreements or intellectual property right agreements with our government our companies have very little recourse to recover the monies that they lose on the stolen formulas, et cetera.

Probably the bigger problem than in pesticides is in pharmaceuticals and that's an area that really worries us because pharmaceuticals is a growth area. The U.S. is the world technological leader. If you are talking about markets in Japan and health care alone can go up to 50 billion to 60 billion dollars. So, there is some big, big markets out there for pharmaceuticals and fairly easy to infringe on those patents, to infringe on the property rights areas and steal them.

We've had that problem with the Four Dragons, with Korea, Singapore, Hong Kong, and Taiwan although with current negotiations, we think that we've got most of them pretty much in line but, you're still going to have problems.

The real biggest problem, the one that's most frightening, frankly, is China. I mean, we are talking about a billion people. We are talking about a country that's trying to bring itself into the 20th century. They are setting up economic development zones. They are trying to bring in a lot of technology and development and they have no idea, no idea what we are talking about in intellectual property rights. Once that plant gets in there, they can steal it fairly quickly.

So, there's some very serious problems that we've got to deal with, both in the GATT and on bilateral negotiations and as far as this industry goes, I would think that that was one of the most serious problems this industry's got.

Senator ROCKEFELLER. Now, that was covered in the trade bill?

Mr. KELLEY. Yes, sir, yes, sir.

Senator ROCKEFELLER. I won't ask for your views on that.

Mr. KELLEY. Well, I support the President's views and——

Senator ROCKEFELLER. I know.

Mr. KELLEY. I think when you guys go back you can rewrite a quick one and we will be all done.

Senator ROCKEFELLER. I see, okay. Mr. Kelley, Secretary Kelley, I am very grateful to both of you gentleman for taking the time to come down here. I wish we could spend longer but we can't and you've helped to enlighten me and I appreciate it very much.

Mr. KELLEY. Seeing my father-in-law is a property owner here in West Virginia, I am always glad to come over and visit my property.

Senator ROCKEFELLER. Thank you.

[The statement follows:]

STATEMENT OF MICHAEL T. KELLEY, DEPUTY ASSISTANT SECRETARY OF BASIC INDUSTRIES, DEPARTMENT OF COMMERCE

RECENT TRENDS IN THE U.S. CHEMICAL INDUSTRY

The U.S. chemical industry, with one million employees, provides work for five percent of the total U.S. industrial workforce. It is the most multinational of American industries. It is the most regulated of American industries. It has the best record of safety of American industries. Most importantly, it has historically enjoyed a positive trade balance compared to other manufacturing sectors of the U.S. economy. Last year the U.S. chemical industry's positive trade balance was $9.3 billion. They exported $26.4 billion while imports were $17.1 billion. Data for the first three months of this year lead us to predict a 1988 trade balance of $9.5 to $9.8 billion. This will be accomplished because U.S. chemical companies have been able to realize cost-effective economies of scale by serving a large homogeneous market from world-scale plants. Other advantages which the U.S. industry enjoys are modern product and process technologies in an industry that is more capital-intensive than labor-intensive.

In an era characterized by mature standardized technologies, takeover raids, and decreased demand from such end-user industries as metals, textiles and machinery, the U.S. chemical industries have had to become more flexible and respond to the gamut of increasingly particular needs. Increased responsiveness to consumer preferences has motivated chemical manufacturers to refashion traditional products and innovate. Diversification away from commodity products and into higher margin specialty chemicals appears to be the trend well into the next decade.

Increasing competition at home and from abroad, coupled with an unstable petrochemical market, has provided the impetus for massive restructuring efforts on the part of U.S. chemical firms. Between 1981–1985, firms pursued policies of consolidation and rationalization in an effort to achieve lower operating costs and improve efficiency both at home and abroad. Our analysts who follow the chemical industry in the U.S. Department of Commerce have observed that many U.S. firms have rationalized operations by moving out of commodity chemical production, selling the plant facilities to become buyers of commodity products. The result is the shift from the production of commodity chemicals to production of higher value-added chemicals and materials that are more in line with the changing needs of chemical consumers.

This shift toward higher value-added production has been used by the U.S. industry as a means for maintaining a competitive edge. Three huge multinationals which I will discuss have realized that innovation and setting the industry standard are means to survival in the highly volatile world market.

On the whole, the U.S. chemical industry, which is dominated by the so-called Big Three, Monsanto, Dow Chemical, and E.I. du Pont de Nemours, is remaining cautiously optimistic about the future outlook of the U.S. chemical industry. Their fears are largely based on the awareness that their survival is inexorably related to the vitality of the so-called chemical processing industries (CPI). Because of the uncertain economic outlook, these major chemical firms are not aggressively building new capacity. Buoyed by an extremely successful 1987, chemical producers will most likely devote excess cash to dividend increases, share repurchases, debt repayment and acquisitions in te specialities areas in 1988.

According to our U.S. Industrial Outlook for 1988, many sectors of the chemical industry are changing in structure through plant closings, mergers, sales of plants, rationalization of management levels, collocation agreements, and tighter supplier networks. Restructuring has been to accomplish economies of scale and, sometimes, to achieve market share dominance in particular products.

Many industry observers view 1988 as being yet another record year for the U.S. chemical industry due to high operating rates, nominal additions to capacity, flat variable costs, the lower dollar, and rising prices. With capacity already running at 85%, the U.S. chemical industry must remain conservative in its expansion, devoting attention to research and development and strengthening existing product lines, rather than pursue rapid commercialization of new products. This year bodes well for the U.S. chemical industry due to tight supply and demand conditions, stable raw material costs, and the lower dollar. As mentioned earlier, U.S. chemical manufacturers have taken steps to hedge against a possible recession by investing in specialty chemicals which tend to be less cyclical than basic chemicals. On the whole, however, our industry analysts expect capital spending to remain on the conservative side in 1988, with more attention being devoted to R&D efforts in the specialty chemicals.

For the rapidly expanding biotechnology industry, 1988 could well be the year of consolidations, according to prominent industry observers. They also agree that the October 19 stock market crash sent stock prices for U.S. biotechnology firms to new lows creating extraordinary opportunities for chemical companies considering biotechnology acquisitions or mergers. Of course, there is a strong possibility that the low dollar valuations will provide the Japanese and Europeans with incentives for investment in the U.S. industry. However, with increased joint venture and cooperative R&D ventures in the works, the outlook for the U.S. biotechnology industry is for continued growth and product development.

The recent trend of rising R&D spending among U.S. chemical companies is also reflective of the industry's new direction—from commodity chemicals to specialty chemicals, specifically, toward products which incorporate biotechnology. Because of their nature, the chemical industries have in the past been closely associated with the petrochemical industry and heavily influenced by the demand for petrochemical products. Those days when the chemical companies depended on commodity chemicals and other energy-related businesses were not characterized by large investments in R&D. Traditionally, U.S. chemical companies spend only about 3% of their sales for R&D activities; this percentage was much lower than what the 6–7% of sales which the European competitors spent on R&D.

However, as U.S. companies are shifting away from traditional chemicals and moving into specialties, pharmaceuticals and the biotechnology business, their R&D spendings are rapidly increasing. While R&D spending of "conventional" chemical companies has remained at a low level, pharmaceutical makers easily spend 10–12% of their sales on R&D. The pharmaceutical business is considered as one of the highest investors in R&D, along with the so-called high tech industries such as aerospace and electronics which spent more than 10% of sales on R&D. The company leading this trend is Monsanto. With its commitment to become one of the leading pharmaceutical suppliers by 1990, Monsanto has doubled its R&D spending for the last few years, and has been pouring one half of R&D expenses into biotechnology-related research. In 1987, the ratio for Monsanto reached 8%. Major U.S. firms' R&D expenditures are expected to climb by 6% to 7% for the next few years. The following table correlates R&D investment spendings as a percentage of sales of leading U.S. chemical companies:

RESEARCH AND DEVELOPMENT SPENDING OF MAJOR U.S. CHEMICAL FIRMS

[Dollar amounts in millions]

	1987	1988E	1989E	Normal percent of sales
Company:				
Air Prods. and Chems	$56	$67	$70	3
Allied-Signal	150	155	160	5–6
American Cyanamid	315	355	375	7–8
Dow Chemical	675	710	750	5
Du Pont	1,210	1,275	1,350	4–5
Ethyl Corp	50	53	56	3
Goodrich, B.F	65	70	75	2–3
Hercules	82	90	95	2–3
Monsanto	600	620	630	8–9
Morton Thiokol	30	33	35	3
Pennwalt	50	55	60	4–5
PPG Ind	250	275	300	5
Products Res. and Chem	5	6	6	5–6
Quantum	31	38	45	1–2
Rohm & Haas	140	150	155	6–7
Union Carbide	160	175	183	2–3
Vista Chemical	NM	NM	NM	NM
Witco Corp	23	25	28	1.5–2
Total	3,892	4,152	4,373	
Percent of change	6.6	6.7	5.3	

Note.—NM = Not Meaningful.

While shifting away from mature commodity chemicals market, U.S. chemical firms are exploring new business areas, including aerospace and defense, health care, automotive, telecommunications, and electronics. The following are embryonic markets which offer substantial promise for growth to U.S. chemical firms:

Market	Material	Key companies
Aerospace and defense	Composites, coatings	Hercules, Prods. Res. & Chem.
Health care	Biotechnology anticancer agents	Monsanto, Du Pont, American Cyanamid.
Automotive	Adhesives, systems, materials	Dow Chemicals, Du Pont, Hercules.
Telecommunications	Composites fiber optic materials	Hercules, Du Pont.
Electronics	Ceramics semiconductor material	Allied-Signals, Dow Chemicals, Du Pont.

Recent moves toward reform of antitrust legislation in the U.S. may eventually allow these firms to establish consortium, or at least, to facilitate an exchange of ideas among the major firms as has already been done in the biotechnology and semiconductor industries. Greater cooperation among firms will, more likely than not, improve the industry's already strong emphasis on basic research while promoting greater transfer of technology into applied research activities.

After the period of retrenchment in the late 70s and early 80s, capital expenditures of U.S. chemical companies begin to climb toward the end of this decade. A substantial proportion of the capital spendings are directed toward the support of the existing plants rather than new expansions. With a high operating rate—more than 80% on an average, U.S. firms are focusing on maintaining current operating capacity.

Over the last few years, there has been a relatively constant level of project activities among U.S. firms. Most non-U.S. projects are still aimed at Europe and Latin America, and enthusiasm to site new projects in East Europe, Middle East and People's Republic of China appears to have stabilized. In toto, however, the number of programs are expected to increase in 1988 to 1989. The following are typical current and proposed projects:

MAJOR PROJECTS

Firm	Product	Comments
Allied-Signal	High Density PE	Expanding by 95MM # to 1.12 billion. Completion: 1Q 1988.
American Cyanamid	Assert-Pesticide Melamine	1,100TP Yr. ($29MM) by end of 1988. 110MM #/yr. joint venture facility. Onstream: end of 1988.
Dow Chemical	Polycarbonates	Expansion in United States; new plan in Stade, Germany.
Du Pont	Titanium Dioxide	$600MM program to expand in United States and Mexico; new plants in Southeast Asia. Startup: 1990–92.
	Mylar-Polyester Film	Expansion in Luxembourg completed in 1987.
Ethyl	Polycrystalline Silicon	Completed 1,250 metric ton/yr. plant in 1987. Double capacity by 1990–92.
	Alpha Olefins	Completed 200MM # expansion in 1987.
Hercules	Propulsion Systems	Expansion at Bacchus, Utah, for rocket motors and graphite fibers.
Morton Thiokol	Sodium Borohydride	New plant in Europe to be completed in 1988.
PPG Industries	Vinyl Chloride	150MM # expansion in Lake Charles, La., completed in 1987.
Quantum	Polyethylene	600MM # expansion (2 plants) to be completed in 1990.
Rohm & Haas	Acrylate Esters	200MM # expansion to be completed 4Q 1989.
Union Carbide	Polyethylene	450MM # new reactor at Seadrift, Texas. Onstream: early 1989.
	Ethylene	De-mothballing 450MM # unit at Taft, La. Completion: early 1989.
Witco	Sulfonation	New plant, to be completed in 1989.

During the 1980s, rapid technological change seems to be providing the momentum toward specialty and consumer products. According to an executive from a major company, the U.S. chemical industry is subject to the combined effects of several tendencies during the 1980s:

An increased need in weight reduction for energy savings in all forms of transportation. This has been a driving force in the refinement and development of high performance plastics, fibers, elastomers, and composites.

Increasing demands for accelerated information and communications has spurred demand for the development of electronic controls and displays, test and measurement instrumentation, imaging, transmission, and storage equipment.

Fuller exploitation of resources has required the use of more sophisticated computers, microprocessors, process instruments, industrial robots, and compatible software systems.

Energy conservation in homes, buildings, and industries has offered new opportunities for new polymer systems. Advances in the life sciences offers promise for new products, processes, and businesses.

It is the dynamic interaction of these trends on a grand scale which underlies and propels changes in strategy, product development, rationalization and consolidation described in this report. These trends have manifested themselves not only on a domestic scale, but in the world market at large, thus inducing U.S. chemical manufacturers to develop new strategies that are more in line with the growing integration of the world economy, as well as the new demands made by consumers for higher value-added technologies.

Now if we look at individual U.S. chemical sectors, we must note that the comments directed to the industry at large, are not necessarily applicable to sub-sectors.

Inorganic chemicals comprise about ten percent of chemical industry shipments. This amounted to $8.8 billion in 1987. The types of chemicals that are classified under this group are chloralkalies, industrial gases, inorganic acids and salts, and miscellaneous inorganic compounds.

The companies that produce inorganic chemicals are characterized by low levels of research and development, declining rates of growth, a decline in productivity, and overcapacity. Company expansion is infrequent, and much effort is devoted to achieving economies of scale in the costs of feedstocks, energy, and labor. Acquisitions, mergers, and consolidations of inorganic chemical companies have occurred frequently in recent years. Thus, only the most efficient producers survive.

The strength of the inorganic chemical industry is highly dependent on the progress of the economy as a whole, which affects those industries which are major organic consumers. These industries include the automotive, housing, paper, metals, glass, and fertilizer industry. Product shipments of the inorganic chemical industry decreased in the past few years because of the production decline and decreased demand from these industries.

This trend changed in 1987 when the production of inorganic chemicals started to increase as a result of the increased demand from the housing, automobile and paper industries.

The industry's status depends on its ability to produce more efficiently and diversify into the production of specialty and high-grade chemicals with greater value-added. Another factor in the health of the inorganic chemical industry is its ability to compete on the world market.

International trade in inorganic chemicals over the past few years has seen a gradual increase in exports and a gradual decrease in imports. The lower value of the U.S. dollar in relation to the currencies of its major trading partners is a factor in this trend. However, in 1987, imports increased at a greater rate than the increase in exports. The general consensus for such an increase in imports is that the industry is operating now at near capacity and may not always find sufficient supply to meet its need for raw materials. Also, with the industry's recent economic problems, the U.S. inorganic chemical companies are wary of expanding capacity at this time.

Even though exports of inorganic chemicals have been increasing recently and the health of the industry has been improving, there are areas where Federal Government actions can help the industry's efforts to improve its competitiveness position. One of these areas is international trade issues. In order to identify and target foreign markets where trade barriers may exist, government-to-government talks regarding the promotion and expansion of competitive inorganic chemical exports is necessary. The success of opening foreign markets may depend on fruitful trade negotiations that exist on the government level if this does not occur on an industry level.

An example of where the Federal Government has had some success in negotiations with one of our trading partners is in the area of soda ash exports to Japan. Soda ash is an important ingredient in the production of glass. U.S. soda ash is very cost competitive on the international market, even though our exports of soda ash have not increased as much as they could. With the assistance of your House and Senate colleagues from Wyoming, where much of our soda ash is produced, our trade negotiators pressed the Japanese government to look at its soda ash market.

U.S. soda ash exporters claimed that the local Japanese soda ash producers and consumers worked at limiting imports of U.S. soda ash in order to keep the price of Japanese soda ash from dropping. In 1983, the Japanese government discovered some collusion among its soda ash producers and consumers and ordered this alleged Japanese "cartel" to cease and desist its illegal trading practices. U.S. soda ash exports to Japan then increased, even though our exports have captured only twenty percent of the Japanese market. The reason for this is that according to the U.S. soda ash exporters, some collusion still exists among the Japanese. They believe further pressure from the federal government must be exerted on the Japanese.

Government to government talks on a multilateral as well as bilateral basis are necessary as well. The upcoming Uruguay Round of trade talks will give our trade negotiators the opportunity to craft agreements with our trading partners promoting the freer flow of international trade in inorganic chemicals.

In order for our trade negotiators to be successful in this international forum, we must work together to do two things: (1) pass and implement the Harmonized System of tariff schedules in order to more accurately and effectively identify and monitor the amount of goods traded internationally, as well as, (2) pass and implement the U.S.-Canada Free Trade Agreement which will show our trading partners that we are committed to free trade with Canada, our most important trading partner in the area of inorganic chemicals.

If you stop and consider the trade advantages which accrue to the chemical industry when free trade with Canada occurs, you might want to go one step further. Mexico has asked us to talk about liberalizing trade in certain sectors. Petrochemicals and pharmaceuticals are two of them. They recognize that they're not ready for any agreement like we've reached with Canada, but they have indicated a desire to progress in the same direction.

The Administration is studying the Mexicans' proposal, but this is only a beginning stage. We're not sure what the Mexicans mean by "liberalizing trade"; whether they're thinking duty reductions, intellectual property rights protection, improved market access, or all of the above. But even if progress is slow, a North American Common Market would possess everything a successful businessman wants: capital, raw materials, and work force.

Probably the best way government can assist chemical companies is to work closely with them to expand international trade. The Commerce Department recently started promoting a program called "Export NOW" where the Department can act as a catalyst in spearheading a revitalized effort to expand exports-especially be small and mid-sized companies that either had abandoned or perhaps never even tried exporting. Through the Commerce Department's staff both in the U.S. and abroad, potential export opportunities are frequently made available to them from foreign companies who need to purchase goods from abroad. These export opportunities are made available to chemical manufacturers, suppliers, and trade associations who are involved in exporting. Other types of export assistance are available to U.S. chemical companies such as the Overseas Private Investment Corporation which provides financial risk insurance to exporters.

Another way the government, particularly the Department of Commerce can assist chemical companies is by having Commerce foreign commercials staffs do market surveys for chemical imports in their respective countries. If, for instance, the People's Republic of China (PRC) is embarking on a program to upgrade and expand its infrastructure, then the PRC must import the chemicals needed in the manufacture of materials to build the PRC's infrastructure which will enable them to industrialize more rapidly.

Also, since Commerce's foreign commercial staffs are in close contact with foreign trading firms and the host country's business climate, our people over there are able to provide background information on these trading firms or the country's general business practices. An American exporter can use this information to be better prepared in business negotiations.

The U.S. fertilizer industry produces nitrogenous, phosphatic, and potassium fertilizers. The basic nitrogen fertilizer is ammonia, which is made from natural gas and nitrogen. Phosphoric acid, made from phosphate rock and sulfuric acid, is the source of most of the phosphorous used in agriculture. The major potassium fertilizer is potassium chloride, commonly called potash. Fertilizer chemicals based on nitrogen account for 53 percent of total U.S. fertilizer consumption; those based on phosphorous, 26 percent; and potassium fertilizers, 21 percent.

The leading world fertilizer producers are the United States, the USSR, China, and Canada. The United States leads in phosphate production, followed by Morocco. The USSR leads in ammonia production, followed by China and the United States. The United States has been a net importer of nitrogen for the last several years. While this trend will continue, we should be able to satisfy our requirements with our own production along with supplies from the Western Hemisphere—Canada, Mexico, Trinidad, and Venezuela.

We expect to continue to lead the world production in phosphate production for the rest of this century, losing share of world market to Morroco whose resources of phosphate rock exceed those of the United States by a factor of four.

We import about eighty percent of our potash requirements, almost all of it coming from Canada, who has the world's largest resources, followed by the USSR who leads in world production.

The United States is the world's largest producer of pesticides followed by Japan and West Germany. We enjoy this position because of our high degree of technology and our high consumption, the combination of which partly explains our high degree of agricultural productivity. It also helps explain our favorable trade balance: exports exceed imports by a factor of more than three.

Our favorable world position in pesticides is expected to continue for the foreseeable future. Environmental constraints may threaten our position, however, to the extent that we continue to have greater constraints than our leading world pesticide competitors.

This appears an opportune place to comment on the impact of environmental regulations on the U.S. chemical industry. Protected citizens, clean air, streams, and groundwater, avoidance of runoff at ground disposal sites, all of these essential health and safety matters, cost a great deal of money. Where the environmental problem is a purely domestic problem, we must consume the cost as necessary to protect ourselves, our wildlife, and our landscape. But we must, at the same time, recognize that the added cost affects our competitiveness in the international marketplace. So far the U.S. chemical industry has managed to do this. But there is a limit. We recently witnessed a $500 million business transaction nearly canceled because of U.S. environmental regulations. An American company was selling its paint and dye operations to a European chemical company—about twelve plants as I recall. Included in the property transfer were two disposal treatment sites. When it came to concluding the sale, the buyer walked away from the table because he was unwilling to assume the potential liability for the treatment sites. My point is: the European firm did not labor under equivalently strict environmental laws at home, and wasn't going to do it here, if it could avoid doing so. And it did. The deal was finally concluded when the seller agreed to retain the waste treatment sites.

One moral of this story is that as a world leader in environmental concern, the United States must become more aware of the trade impact its environmental regulations have. It wouldn't be a bad idea to have "trade impact statements" along with the "economic impact statements" now required. Another to be learned from this story is that when environmental problems transcend national borders, they need international cooperation to resolve. Other countries may not share their concerns to the same degree. This fact has both trade and environmental consequences.

A good example of a "global problem" with a "global solution" is the recent Montreal Protocol on Substances that Deplete the Ozone Layer. Countries around the world agreed to "do their share". Our domestic regulations comply with those of the Protocol: the results are trade neutral and the problem will be solved. Had we attempted to do more than our share (and indeed we did by eliminating chlorofluorocarbon use as an aerosol in 1979), we would have put our producers and users at an extreme disadvantage competitively. An example of a "wrong" environmental solution is current effort by international organizations to have importing country governments consent, in writing, to the import of certain pesticides and chemicals. The problem here, is not the arrival of a chemical, but the misuse of it within the importing country. The "right" solution is training in proper use and storage of the product, and establishment of adequate registration processes in every importing country. Two international programs which provide that training have begun. Until they complete their work, it will be helpful to provide importing countries with information about hazardous imports. (We, but not all other nations, already do this.)

Trade concerns which must be addressed here, if the environmental problem is to be solved are:

(1) All exporting countries must notify about their exports.

(2) The importing country must take import restrictive action which applies to all sources of the undesired product.

Environmental action which does not include these trade concerns will have loopholes because an importing country might unwittingly receive a product it didn't want. The countries which notified would have their exports rejected; but countries which didn't notify, or countries which reexported but didn't share the concern of the originating exporter, would have their product accepted.

The greatest world threat to our pesticide industry is violations of our intellectual property rights by a number of developing countries. The average cost of developing a U.S. pesticide exceeds $40 million. By avoiding this expenditure, violators are able to penetrate world markets by cutting the price. This practice threatens our pesticide industry as well as world agricultural productivity. We are responding to this threat with legislative proposals and by insisting that countries which benefit from lower tariffs under the Generalized System of Preferences (GSP), provide adequate intellectual property protection or risk loosing this benefit. It makes little business sense to eliminate tariffs on a product from a country that doesn't honor our patent laws, when that same country is stealing our foreign markets with counterfeit product.

The pharmaceutical industry in the United States is divided into four primary categories: Biologicals, which include blood and blood derivatives; Medicinals and Botanicals, which include active ingredients used to formulate finished dosage forms of drug products; Pharmaceutical Preparations, which are the finished dosage forms; and Diagnostics, which include materials used in diagnosing human or animal states of health. The aggregate value of shipments of these categories was estimated at $34 billion in 1987, 7.6 percent above the value in 1986. Pharmaceutical preparations comprised about eighty percent of this total.

The pharmaceutical industry employed about 167,000 people in 1987, about 2,000 more than in 1986. These employees earned average wages of $12.28 per hour, 3.4 percent above the average 1986. Production personnel in the medicinal chemicals sector earned the top wage, averaging $14.45 per hour. According to a recent survey, employees in the pharmaceutical industry are happier with their jobs than those of any other field of endeavor. The reasons are good salaries and benefits, competent supervision and co-workers, and good work environment. Most satisfied were those working for the largest companies. The only areas of dissatisfaction were job security and opportunities for promotion.

Industry profits, as a percent after sales, are estimated to have averaged 14.2 percent last year. Over the past ten years, the average annual profit has ranged between 9.9 percent and 14.5 percent. As a result, the pharmaceutical industry in the United States has proved more profitable than most other industries and considerably above the profit of all non-durables which averaged 5.4 percent in 1987.

The value of exports of drugs and pharmaceuticals increased 8.1 percent a year from $.48 billion in 1977 to $3.2 billion. In 1987. Imports grew at an annual rate of 16.8 percent during that period of time. However, the United States enjoyed a positive balance of trade in pharmaceuticals of $400 million last year.

Innovation is the heart of the pharmaceutical industry. Without the continuing support of research and development activities by the industry, profits would soon deteriorate to those of many mature, commodity-type industries—and advances in medicine would decrease significantly. The dedication the industry has to R&D is apparent from the amount of money spent on this activity in 1987, an estimated $5.4 billion. The cost of developing a unique new drug product is estimated at $125 million.

As for the world situation in pharmaceuticals, the United States is the biggest market at $34 billion, with Japan second, at $24 billion, while West Germany and France are third and fourth with $8.5 and $6.5 billion, respectively. The United States has nine of the top fifteen multi-national companies in the world. These companies are Merck, American Home Products, Pfizer, Warner-Lambert, Abbott, Eli Lilly, Bristol-Myers, SmithKline Beckman, and Upjohn. Other U.S. companies are also world leaders in pharmaceutical sales, such as Johnson & Johnson, Lederle, E.R. Squibb, Merrell Dow. Marion, Mead Johnson, Schering-Plough, Richardson-Vicks and Sterling.

Lack of protection for U.S. intellectual property rights, especially in developing countries, is a major obstacle to doing business around the world. it is estimated that U.S. pharmaceutical companies lost over $2 billion last year because of patent violations. Other non-tariff barriers that restrict U.S. investment overseas are:

Delays in approvals of new drugs primarily because of their higher costs;

The disallowing by foreign governments of sales of U.S. pharmaceuticals once a domestic manufacturer enters the market;

Foreign government control of prices and promotion;

Delays in permitting transfer of manufacturing licenses from foreign whole or partial ownership to U.S. ownership in that country.

The U.S. pharmaceutical industry is going through a dynamic, but trying period in its history. Research and development costs are escalating while R&D productivity is declining. Lack of liability insurance and the increasing magnitude of litigation awards threaten the continuation of certain lines of pharmaceuticals such as vaccines. The increase in generic prescription products is putting pressure on profits. However, despite these obstacles, the industry will continue to grow at 2 to 3 percent a year through 1991.

Some government actions which would improve the competitiveness of the U.S. pharmaceutical industry include enhancing and encouraging R&D activities. This would not only assist the domestic industry, but would permit introduction of new products throughout the world. The benefits of such action are many fold. We can cite Merck's recent discovery of treatment for river blindness, which it has made available at no cost to developing countries to treat one of the dibilitating illnesses of mankind. Another consequence of expanded R&D by American companies is that when U.S. pharmaceutical manufacturer markets a product, that product is of the highest quality standard of any in the world.

With the U.S. chemical industry's future looking good, despite increased competition and imports, there remains one sector which promises changes not yet imagined in our way of life. This is the work being done to develop advanced materials. Most industrialized countries have targeted the advanced materials industry for development and expansion into the 21st century. It holds great economic promise for the future, and steps must be taken to preserve and expand U.S. international competitiveness in this arena.

The designation of "advanced materials" is broadly applied to subsets of the chemical, metals and ceramics industries. However, as advanced materials lack separate Standard Industrial Code (SCI) classifications, they are not readily identifiable. Generally, advanced materials implies new and exotic formulations of existing materials that impart unique properties to the products made from such matter. By the turn of the century, advanced materials should be found in significant quantities in aerospace, automotive, construction, electronic and medical products and devices. Because advanced materials are components which enhance product utility and performance, the materials have a significance to the economy extending far beyond the value of the materials themselves.

Under the heading "advanced materials" we have "advanced composites". These are a family of materials which consist of high strength fiber impregnated resin matrices. The nature and characteristic of each element in the composite gives each structure unique attributes and allows greater latitude in product design and manufacture than in conventional materials. The principal fibers used in advanced composites include graphite, aramid, S-glass, E-glass, boron, metals and ceramic wiskers. The principal resins fall into two categories: thermosets and thermoplastics. Major applications for advanced composites are currently in the aerospace industry (both military and commercial). Limited inroads have been made in automotive applications (drive shafts, chassis, leaf springs, wheels, etc.). Advanced composites are generally considered a high-price/low-volume element of the reinforced plastics industry. In 1985, they accounted for less than 1 percent by weight (11 million lbs.), but approximately 5 percent by value ($600 million) of the total U.S. reinforced plastics market. In that year, the world market for advanced composite material was estimated at 22 million pounds, valued at $1.3 billion.

Another category of advanced materials is advanced ceramics. This broad class of materials includes monolithic ceramics, ceramic matrix composites and ceramic coatings. Compared with metal components, ceramics offer superior wear resistance, high-temperature tolerance, chemical stability and conductivity. Though defined as non-metallic, inorganic solids, modern advanced ceramics bear little resemblance to their sand and clay predecessors. Today's materials include oxides, carbides, nitrides, or other compounds of silicon or of metals such as aluminum, boron, zirconium, beryllium, etc. These elements impart unique characteristics to components that have made them the materials of choice for protective armor, process equipment, grinding and cutting tools, bearings, and more recently, superconductivity research. In 1985, advanced ceramics accounted for $2 billion in the U.S. and $5 billion in the world market. Of this, 90 percent of the market was dominated by electronic ceramics, while 10 percent of the market was in structural applications.

Another group of advanced materials is advanced metal alloys/powder metallurgy. Unlike advanced composites and ceramics, advanced metal alloys are not defined by their material content, but by the method of their manufacture. Much of the impetus for their development comes from the demands of high performance products such as military and commercial jet engines and competition created by advanced composites and ceramics in what were traditionally captive markets (aerospace, electronic, and automotive industries). Like advanced ceramics, these alloys are made from extremely pure, microscopic powders that are formed using exotic processes such as Hot Isotatic Pressing (HIP), Rapid Solidification Technology (RST), etc., which impart superior performance characteristics and allow components to be formed to very near their net shape. These alloys even can be grown as monolithic crystals that impart superior performance over conventionally produced components or parts made of essentially the same materials.

Much of the development work ongoing in this arena in the United States focuses on metal matrix composites. Because much of this interest in these materials has been for defense and space applications, most of the funding for research and development has come from the Department of Defense and NASA. Commercial applications of such materials are likely to be far less prevalent than for other advanced materials due in part to their high costs and restrictions imposed on the transfer and dissemination of technical data. Nonetheless, work is going on in Europe and Japan to develop commercial applications. Because these materials mimic the performance of characteristics of advanced ceramics and can be reliably mass produced, they are already being used as diesel engine components in Toyota trucks.

Though investment in advanced materials by the U.S. exceeds that of Japan, the commercial applications of advanced materials in the U.S. is much more limited. This is due, in part, to the U.S. focus on aerospace and military applications, which appear to be growth markets nearing 20 percent per year to the year 2000. Nonetheless, while U.S. commercial interests have chosen to remain passive, waiting for military and aerospace applications to lead the way in terms of research on materials and manufacturing technologies, Japan has taken the lead in introducing advanced material components in the commercial marketplace. By allowing commercial markets to develop abroad, U.S. commercial interests are abandoning foreign markets to competitor nations and setting the stage for foreign owned firms to penetrate and possibly even dominate U.S. commercial markets as they develop. The solutions to this dilemma must recognize many factors which set us apart from competitor nations. Because of the complexity of advanced materials manufacture and use, close collaboration between material producers and users will be essential.

The one key competitive factor for the U.S. chemical industry of the future is none of the above, and it is a factor in which everyone must participate. The issue is societal as much as it is governmental or business. I refer to education. As an epilogue to "Why Johnny Can't Read", let me ask: "Why is it that if Johnny or Mary don't excel at math in second or third grade, the immediate comment by parents or teachers is 'You'll never be an engineer'?" This is reflective of a society which does not appreciate that yeast makes bread rise, baking powder makes cakes light, and bicarbonate of soda makes discuits fluffy. We need to rectify our appreciation of science. We also need to look at demographics and discern what segments of society our engineering students in the year 2000 will come from. The changes required in our educational philosophy are as extensive as anything said here on competition and trade. The question of the U.S. chemical industry's international competitiveness is a relative one, as growth in chemicals, pharmaceuticals, biotechnical products and advanced materials, will be global and lucrative enough for large multinationals and small domestic businesses alike. At issue, will be not whether the U.S. will have a stake in the international marketplace, but instead, how big a stake and for how long. Because manufacturing matters greatly to the wealth and power of the United States, we shall have to sustain our market and research development base, to maintain the kind of society we have. The United States can neither shift out of manufacturing and into a service economy, nor establish a long term preserve around traditional blue-collar industries and hope to compete in an ever-expanding and competitive global economy. Though many have argued to the contrary and urged expansion of the service based economy, the opportunities offered by an internationally competitive U.S. chemical industry sector are too great to be ignored.

QUESTIONS OF SENATOR ROCKEFELLER AND THE ANSWERS THERETO

#1 Can you point to specific factors in the Administration's trade policy that have helped the U.S. chemical industry?

- o Intellectual Property Rights: The Commerce Department "Strike Force" study lead to an Administration policy statement on intellectual property in 1986.
- o Consultations on intellectual property right issues were conducted with Argentina in 1987.
- o The Pharmaceutical Manufacturers Association filed a 301 petition on intellectual property rights protection in Brazil. The U.S. Government accepted this petition.
- o Canada in response to Administration requests, introduced patent legislation in 1986. U.S. industry supported the effort, however compulsory pharmaceutical licensing continues to be in affect, despite the Free Trade Agreement.
- o The Dominican Republic enacted a strengthened copyright protection law.
- o Mexico enacted legislation on patents and trademarks in 1986. Provisions delaying product patent protection for pharmaceuticals and chemicals, and process protection for biotechnology for ten years were retained. The retention of these provisions were taken into account in the review of the Generalized System of Preferences (GSP), in which Mexico lost an estimated $200 million in GSP duty-free benefits. Consultations to resolve differences continue(s) in 1987-88 under the bilateral framework.
- o The Administration has ongoing consultations with Yugoslavia on patent protection for pharmaceutical compounds, chemical compounds, and limited patent time span.

While the accomplishments cited were directed toward chemical and pharmaceutical concerns, other U.S. Government efforts to strengthen patent protection for software, electronic products, and electronic media in foreign countries, may have "spillover" positive effect for the chemical industry. In addition to the countries named, intellectual property rights discussions in these related areas were held in Chile, Colombia, France, Japan, India, Indonesia, Malaysia, Mexico, Philippines, Singapore, Spain, Taiwan, Thailand, Turkey, and Venezuela.

- o Israel - U.S. Free Trade Agreement - The Administration and Israel established a Free Trade Agreement which became effective in 1985. The FTA will eliminate customs duties and most non-tariff barriers on trade between the two countries in stages, by 1995. This FTA is the first trade agreement to include a wide range of services through non-binding declaration. In the process of the negotiations, the Administration was particularly sensitive and responsive to the U.S. chemical industry's expressed concerns. Through the industry representatives on the Industry Sector Advisory Committee, the Administration obtained prolonged tariff staging for import sensitive chemical products - bromine products being a prime example. The bromine industry considered this accomplishment so successful that they have prompted the Administration to pursue similar negotiations with the Japanese.

- o Canadian - U.S. Free Trade Agreement: The Administration worked closely with the Chemical Industry Sector Advisory Committee and again was responsive to industry's concern(s). In addition, an ISAC member worked closely with the Treasury Department official negotiating the "Rule of Origin" provision of the Agreement.

o Market Oriented Sector Selective (MOSS): The Administration, conducted with Japan MOSS talks on medicinals and pharmaceutical preparations, and certain medical equipment. Agreement was reached on removing regulatory and non-regulatory barriers. Joint announcement of this agreement was made in 1986.

#2 How do you evaluate your success in assisting the US chemical industry in its efforts to export?
The Office of Chemicals & Allied Products spend a great deal of time counselling small and medium sized businesses in the mechanics of exporting. This often involves advising them of the programs which are available through the Department of Commerce's U.S. Foreign & Commercial Service, for example, the Trade Opportunities Program, Export Now, and the Economic Bulletin Board. We ask those whom we counsel to keep us abreast of any progress they may have made in reaching their goals. On several occasions, our industry specialists have been instrumental in promoting exports by bringing together buyer and seller or by providing market intelligence to consultants and other interested parties. Although the results of our efforts are not quantified, all indications from those firms we are in contact with are that our input is having a positive effect.

#3 What markets have been targeted by your foreign officers as potential export markets?
Export opportunities are not necessarily obvious. As a general rule, we point exporters to economies with relatively high growth rates in those end-user industries which fall under our province. Of greater interest to prospective exporters, however, is the Comparison Shopping Service. This service requires the interested exporter to consult with our trade specialists in order to pinpoint a target country. The trade specialist then works together with trained market researchers to assess the potential of a specific product.

#4 Considering that the chemical industry is one of our star performers, does it concern you that the trend on imports of chemicals is up over 11 percent a year the last five years, and that while exports are increasing, they are only increasing at half the that rate -- less than 6 percent a year for the last five years?
Although the situation could be viewed as alarming by certain people, we think that these trends should not be taken at face value. For instance, when trade is adjusted for price effects, it becomes obvious that chemicals imports have, in real terms, declined between 1985 and 1987, while exports show just the contrary tendency. There are a number of variables which have influenced this nominal growth in imports: the restructuring of the chemicals sector since 1982, exchange rate fluctuations, the gradual shift from commodity products to those of a value-added nature, among others. Compared to the same period last year, net trade in chemicals has grown by over 20 percent and capacity utilization has accelerated as well. According to our analysts, as long as the demand for value-added chemicals remains firm and the rate of growth of imports of commodity chemicals exceeds that of exports, a resurgence of high value exports is not to unrealistic.

Senator ROCKEFELLER. Now, Dr. Lenz, Dr. Allen Lenz is the Director of Trade and Economics for the Chemical Manufacturers Association; accompanied by Jim O'Connor, who is Manager of International Trade.

Before I do that I should, and this is my mistake and I apologize, Lucille Morgan, from Bob Wise's office is here and Steve Spence from Governor Moore's office is here and Ramona Gucherate is here, also, from the Governor's office. Hi, Ramona. And Larry Dysart, the president of the National Institute for Chemical Studies is here and we are glad that all of you folks are here and glad that you took the time to come. Dr. Lenz, I'm glad to see you, sir, and also Jim O'Connor, we'd be delighted to hear from you.

STATEMENT OF DR. ALLEN J. LENZ, DIRECTOR, TRADE AND ECONOMICS, CHEMICAL MANUFACTURERS ASSOCIATION; ACCOMPANIED BY JIM O'CONNOR, MANAGER, INTERNATIONAL TRADE

Dr. LENZ. Senator Rockefeller, members of the Subcommittee on Foreign Commerce and Tourism, thank you for the opportunity to testify on behalf of the Chemical Manufacturers Association concerning the international trade and competitiveness of the U.S. Chemical Industry. I am Allen Lenz, Director of Trade and Economics for the association and I am accompanied today by Jim O'Connor, Manager of International Trade for the association.

The Chemical Manufacturer's Association is a non-profit trade association that represents companies in the U.S. and Canada. Our membership provides about 90 percent——

Senator ROCKEFELLER. Dr. Lenz, could you bring that mike up a little closer? I think that maybe the people in the back may not be able to hear.

Dr. LENZ. Our membership provides about 90 percent of the nation's productive capacity for basic industrial chemicals. The very large recent U.S. trade deficits that have been manifested predominantly in a deterioration of U.S. manufactures trade make a review by this subcommittee of the performance and outlook of various individual industry sectors timely and useful.

We believe it appropriate that these hearings begin with the chemical industry. The chemical industry is a basic industry. Only a small portion of its output goes directly to consumers. Most of its output supports other industries. About half goes to other U.S. manufacturing industries.

There is, therefore, a strong mutual interdependence between the U.S. chemical industry and the rest of U.S. manufacturing. We depend on U.S. manufacturing industries for a very large portion of our markets and they depend upon us for thousands of products they need to support their manufacturing operations.

Thus, a more efficient and more competitive U.S. chemical industry makes a very important contribution, both to a stronger, more competitive U.S. manufacturing sector and to improved U.S. trade balances. Most recently, performance of the U.S. chemical industry has been excellent. In 1987, production, sales and profits hit new highs and the trade balance improved to a surplus of $10.2 billion.

These recent achievements, however, must be assessed in the perspective of an extended period of industry difficulties and slowed growth during the 1980's. Recent gains were achieved at significant cost to the industry as it restructured to cut costs and improve efficiency. A number of plants and operations have been shut down or sold off and overhead and other costs have been reduced.

By 1987 there were 85,000 fewer jobs than in 1981, reflecting cuts in all levels from executives to plant workers. Based on these changes in the industry and other currently favorable factors, including reasonable prices of oil and other raw materials, a more reasonable dollar exchange rate and the ongoing resurgence of U.S. manufacturing, 1988 results may be better than those of 1987 and the near term future looks bright.

However, the industry has lost some international market share since the early 1980's and the 1987 trade surplus remains significantly below that of 1980. Moreover, there is no assurance that the chemical industry will significantly further expand its trade surplus much beyond the $10.2 billion 1987 level. Trends are in evidence that could constrain, if not reverse, trade performance in the medium and longer term future. A principle threat to the longer term international competitiveness of the U.S. chemical industry and its contribution to the trade balance in the years ahead comes from the expanding foreign production of petrochemicals which in the past have been a major source of U.S. trade surpluses. Now energy rich developing countries are developing modern integrated production facilities that will be able to match those of the U.S. in a number of areas.

Only a few years ago there was a global oversupply of petrochemicals. Now there is a global shortage. Yet, for a combination of reasons, including low rates of return on recent investments, concerns about competition from developing countries with access to low price feed stocks, and a variety of other factors, including uncertainty about the dollar exchange rate and U.S. regulatory and tax policies, new petrochemical plants are not being planned and built in the U.S.

Failure to add new capacity in a timely fashion could signal gradually abandoning petrochemical export markets to foreign suppliers and a diminishing U.S. trade surplus.

A variety of factors will influence the international competitiveness of the whole spectrum of U.S. based chemicals production. These will include the dollar exchange rate, oil feed stock and energy prices, tax policy, regulatory policies, investment policies and trade policies. Our more detailed statement, submitted for the record, addresses each of these issues in some detail. I would particularly like to emphasize, however, that U.S. manufacturers no longer enjoy unique abilities to design and manufacture new and better products. Foreign competition is tougher than ever before and will become even tougher in the years ahead. This will apply to the chemical industry and to all manufactured products.

The U.S. in 1987 had a manufacturer's trade deficit equivalent to about 3.4 percent of our gross national product. Our national policies, particular tax, regulatory and investment policies need to carefully access their impact on research and development and investment in new plant and equipment that do so much to determine our international competitiveness.

As international competition for world manufacturers markets gets tougher and tougher, it will be more important than ever before that U.S. manufacturing not be burdened by tax and regulatory policies that disadvantage in international competition. Tax policies should consciously be directed toward the fact of huge U.S. manufacturer's trade deficits.

In today's more competitive world economy, U.S. tax policies should more than ever before focus on the need to provide incentives for research and development that will develop new products and process technologies and on the need for investment in new manufacturing plant and equipment that will more effectively produce both old and new products.

We urge the Congress should give careful consideration to the effects of all new legislative initiatives on the international trade and competitiveness of U.S. manufacturing. That completes my statement. Thank you very much. I will be pleased to answer any questions that you may have.

Senator ROCKEFELLER. Thank you, Dr. Lenz. I do have a number of questions. How would you characterize the trade bill recently vetoed in terms of its effect on the chemical industry?

Dr. LENZ. On the competitiveness of the chemical industry?

Senator ROCKEFELLER. Whatever you wish.

Dr. LENZ. Well, speaking overall, I don't know that the trade bill does a whole lot to alter competitiveness of manufacturing, but I think since my colleague, Jim O'Connor, has worked intensely with this issue, I am going to defer to him to answer this question with regard to the chemical industry.

Mr. O'CONNOR. CMA has supported the trade bill. There are a number of aspects of it that we believe will improve the situation. We certainly are interested in seeing the harmonized system implemented. We are interested in having specific negotiated authority given to the president and we believe that the compromise that was reached in the trade bill will give the president that authority.

We did not favor the plant closings provisions of the bill, but we felt that, overall, the benefit in an approved trade policy would be worth supporting the bill and we do support it.

Senator ROCKEFELLER. Now, that's interesting because it was my impression that CMA was one of the few industrial groups that in fact did support the plant closing aspect of the trade legislation.

Mr. O'CONNOR. We support the trade bill in spite of the plant closings.

Senator ROCKEFELLER. All right. So, the net effect——

Mr. O'CONNOR. The net effect is the——

Senator ROCKEFELLER. Okay. In terms of plant closing, do chemical companies generally follow plant closing notification as a matter of course, either through a contract or whatever?

Mr. O'CONNOR. The majority of the union contracts with the chemical industry have those provisions in them.

Senator ROCKEFELLER. So, then, what's the big problem?

Mr. O'CONNOR. More of a philosophical problem than an actual practice.

Senator ROCKEFELLER. Okay.

Mr. O'CONNOR. Which is one of the reasons why we felt that that did not sway the balance enough to oppose the trade bill.

Senator **Rockefeller**. Can I get your views, Dr. Lenz, on the Canadian Free Trade Agreement?

Dr. **Lenz**. Well, again, Mr. O'Connor has worked intensely on this bill and I'll defer to him on the details.

Senator **Rockefeller**. All right.

Dr. **Lenz**. But the Chemical Manufacturers Association certainly does support the Free Trade Agreement.

Senator **Rockefeller**. Mr. O'Connor.

Mr. **O'Connor**. Mr. Kelley already mentioned the availability of raw materials as one of the things that would be beneficial to the chemical industry.

We also very much favor the relaxation of investment opportunities in Canada through the free trade agreement and feel that market access will be much greater under the Free Trade Agreement than it was before. We have testified before two committees on the Senate side and submitted a written statement to the House in favor of the Canadian Free Trade Agreement.

Senator **Rockefeller**. Foreign competition has been increasing in some sectors of the industry, petrochemicals would be one example of that. What areas do you see the industry moving into in the future in order to remain competitive internationally?

Dr. Lenz.

Dr. **Lenz**. Well, I think the industry is generally trying to move more and more into speciality chemicals. That's a whole variety of new high-tech products from bioaides to high-technology materials, etc. and the reason for doing that, I suspect, is that basically those items are more profitable than some of the basic chemicals and, of course, to be competitive you have got to move into these new technologies and these new kinds of products.

One concern with that, however, would be that if you move away from the basic chemicals, some feel that the day may come when we are net importers of some of the basic chemicals such as petrochemical items. That could raise havoc with our trade balance and result initially in declines in the positive trade balance. The value involved in some of the new high-technology materials and products may not be as large as some of the bulk chemicals.

We can't say that for certain because we don't know what the future holds, but that would be one risk that we get into that if we move more into production of the higher technology materials. Advanced materials, in terms of exports, may not have the same value of some of the bulk chemicals that we are now exporting.

Senator **Rockefeller**. All right. There is no question that the exchange rates have worked to the advantage of the chemical industry and my question, I guess, would be: Do you think the dollar is about where it ought to be and if you do or if you don't what, in that the weakening of the dollar has allowed our competitive position to increase, what in your judgment would happen if the position of the dollar grew stronger? Has the chemical industry made the type of structural changes and strengthened itself internally enough to withstand that?

Dr. **Lenz**. Well, certainly the dollar level is a very important factor for the chemical industry and the decline in the dollar has been very important in restoring competitiveness. But, of course, the dollar's value is only one of many factors that influence the chemical industry.

The price of oil is another important factor and, of course, tax policies and so on.

Senator ROCKEFELLER. I understand that. But I'm talking about the dollar level.

Dr. LENZ. I personally would think, based on work I did before I came to the Chemical Manufacturers Association, that the dollar will not enjoy any particular strengthening in the foreseeable future, that it has somewhat farther to go before we will really restore our trade balance.

The manufacturer's trade deficit last year was a $137 billion. It probably won't improve more than $15 or $20 billion this year. We have a deficit in motor vehicles alone that's over 1 percent of gross national product, that's $53 billion, and nothing that's happened to the dollar yet in my judgment is going to significantly change that.

The dollar, to shut down a number of imports or cut them significantly will have to move significantly farther down in my judgment. The strengthening of the dollar would certainly not aid the chemical industry and would be a significant factor in making it less competitive.

Senator ROCKEFELLER. Fortune Magazine had a special report last year on the economy of the 1990's and it was noted that global over capacity would continue to be a problem in the 1990's and the head of a chemical industry research firm was quoted as saying, "The market is getting saturated." Now what areas of the chemical industry do you think or can you forecast as having high growth potential and what areas of the chemical industry, if the high saturation statement is one with which you agree, do you think are affected by it?

Dr. LENZ. Contrary to the situation a few years ago, as I understand it, there is expected to be a strong growth in petrochemicals over the next several years as well as many of the advanced materials in high-technology products that we have discussed.

The problem with petro-chemicals growth is that it is not expected, under foreseeable circumstances, that this will lead to new investment in plant in the U.S. Right now the petrochemical industry is up against the stops in the U.S. and globally there is a need to add additional capacity and that's in expectation of continued growth in the petrochemicals market. But as I indicated, it's considered not likely by most observers, that there will be production added in the U.S. because of a number of uncertainties.

There is a remembrance of having to shut down a lot of plants in the last few years and go through a tremendous restructuring in petrochemicals. The prospect of an adequate rate of return to justify large new investments is uncertain.

There are also uncertainties about the dollar exchange rate. There are uncertainties about the price of the feed stocks that are necessary to feed the petrochemical industry. And there are uncertainties about U.S. regulatory policies and tax policies. All these inhibit investment in the U.S. in an area that's expected to have significant growth over the next several years, petrochemicals.

Senator ROCKEFELLER. Are you familiar with the problem of rail shipments and captive shipper problems, bulk commodities, and the Staggers Reform Act? If you are not just say so because I will ask it of somebody else later on.

Dr. LENZ. I am not intimately familiar with that. Are you, Jim?

Mr. O'CONNOR. No.

Senator ROCKEFELLER. Okay. One of the things that we would like to see happen here in West Virginia and across the country is the technology developed to turn coal into methanol. We burn about 100 billion gallons of gasoline in America every year for the purposes of transportation. It's projected by virtually all, that by the mid-1990's we'll be importing over, well over 50 percent of our oil. Oil right now, the payment for imported oil represents one third of our trade deficit. So, it's obviously not a very friendly factor and one would wonder why we pursue the use of oil for transportation. Now, one of the hopes is that we can turn to alternative fuels, that being ethanol, in some cases, methanol, which can be made from natural gas and can be made from coal. In this state we have both.

In the case of coal, the technology for turning it into clean burning fuel is not yet advanced enough. In fact, there is very little technology available on that. Chemical industries would seem to me to be one of the industries that could do very well by this, both in terms of profit and in terms of service to the nation in the future.

Do you have any idea as to, and also the use of the by-products, the CO^2 by-products of making methanol out of coal. Do you see or are you aware of any interests or discussion about the prospects for making methanol from coal in your industry?

Dr. LENZ. No, Senator, my expertise certainly doesn't extend to that. How about you, Jim?

Mr. O'CONNOR. No, but we can certainly provide you with——

Senator ROCKEFELLER. I would be very interested to hear about that because that's going to take place in this country. Somebody is going to be doing it and it's going to be an enormous business at some point in the, hopefully, not too distant future and I would appreciate CMA views on that.

Dr. LENZ. We'll be happy to give you that, Senator.

Senator ROCKEFELLER. Let me see. What is your industry capacity utilization right now in general numbers?

Mr. O'CONNOR. 82 percent.

Dr. LENZ. 82 percent, on average, but in some areas it's up close to 100 percent.

Senator ROCKEFELLER. Up to 100 percent?

Dr. LENZ. Close to 100 percent.

Senator ROCKEFELLER. Okay. Could I ask one more question of you? Title III of Superfund talks about the community right to know. That's been the subject in this state of some importance around the country.

What is happening with respect to that?

Dr. LENZ. Well, there is a very major program that is mounted and administered by the Chemical Manufacturer's Association.

It consists of a number of elements, one that I'm familiar with, and I am relatively new to the Chemical Manufacturer's Association, is the community awareness and emergency response program. That, I understand, is a very effective program and perhaps, Jim, can you comment further on other aspects, enlarge on that?

Mr. O'CONNOR. I prefer to submit our response to that in writing.

Senator ROCKEFELLER. Would you please do that in some detail? That would be important to me. Dr. Lenz and Mr. O'Connor, I am very grateful to both of you. We could talk much more but we have other witnesses and I'm appreciative of your coming to West Virginia and being as helpful as you have been.

Dr. LENZ. Thank you very much, Senator.

Senator ROCKEFELLER. Thank you very much.

[The following information was subsequently received for the record:]

QUESTIONS OF SENATOR ROCKEFELLER AND THE ANSWERS [1/] THERETO

1. CMA supports negotiating authority for the new GATT Round. What are CMA's objectives for the new Round?

The Chemical Manufacturers Association (CMA) testified before the Senate Finance Committee on April 8, 1987 concerning the Uruguay Round. The testimony (See Attachment 1) reflected CMA's position as it was developed before the negotiations were underway for the Uruguay Round, and therefore did not address all of the agenda items currently on the table in Geneva. We are currently updating our position to address all of those agenda items which are of interest to the chemical industry. Attached is a one page summary of the CMA position on our goals for the Uruguay Round (Attachment 2). The text of the position statement itself will not be finalized until September, but we will be glad to forward it when it is ready.

CMA's general objectives for the new Round parallel those of other major chemical producers as evidenced by the joint statement of CMA and the European Council of Chemical Manufacturers Federations (CEFIC).

2. Foreign competition in some sectors of the industry is increasing -- petrochemicals, for example. What areas do you see the industry moving into in the future in order to remain competitive internationally?

Increased foreign competition may tend to move U.S.-based production toward a higher proportion of output in specialty chemicals and a diminishing portion in commodity chemicals.

Commodity chemicals can be characterized as those with high volume production, continuous flow production processes, and low profit margins. Specialty chemicals typically would involve lower volume production in batch processes with relatively higher profit margins. Many -- but by no means all -- specialty chemicals have petrochemical bases. A deemphasis on production of some petrochemical-based commodity chemicals, however, would not preclude continued expansion of production of specialty items derived from petrochemical inputs.

There is a wide range of specialty chemical products that appear to have significant growth potential. Some examples follow:

Pharmaceuticals will continue to grow in importance. New products, such as cholesterol-lowering drugs; biotechnology products, genetically engineered versions of proteins that occur naturally in the human body -- one application dissolves blood clots in heart attack victims; and agricultural biotechnology products ranging from disease-resistant plants to bioengineered vaccines for farm animals.

The range of new plastic and synthetic and other composite materials generated from chemical processes will continue to

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[1/] The attachments referred to were not reproducible.

expand. The use of plastics in automobiles, for example, will likely continue to increase. Work is underway on the development of high-performance engineering thermoplastics that would be much stronger than existing thermoplastics and would resist high temperatures and be impervious to moisture, chemicals and radiation. Applications include electronics, fiber optics, automobiles and chemical processing.

There is also great potential in ceramic materials and work in progress may develop materials that will allow "superconductivity".

Improvements in existing materials and the creation of new products will also extend to seemingly mundane applications such as improved man-made fiber floor coverings and high-performance automobile tires.

New specialty chemical applications already evident range from the development of super absorbent disposable diapers, to ultra-pure gases used as etching agents for manufacture of the latest generation of semi-conductors, and to supercritical fluids applied to a wide variety of uses, including isolation of the ingredients that cause makeup to run smoothly and increased measurement precision that contributes to many fields, such as the development of medicines and oil exploration.

Continued research and development will develop many more new specialty chemical industry products and applications that cannot be anticipated today. The development of new products by the U.S. chemical industry, however, does not ensure the international competitiveness of U.S.-based production of these items. In today's world, new technologies move across international borders rapidly, and production capabilities abroad are increasingly sophisticated, often matching and sometimes surpassing our own. Maintaining a U.S. chemical industry trade surplus will require a favorable U.S. environment for U.S.-based manufacturing activity -- dollar exchange rates, tax and regulatory policies, and other factors -- that will allow U.S. producers to compete successfully against foreign-based production.

3. Could you tell us what the industry is doing to comply with Title III of Superfund on "community right-to-know"?

The Chemical Manufacturers Association on May 26, 1988 testified before the Subcommittee on Superfund and Environmental Oversight of the Senate Environment and Public Works Committee on Title III of Superfund. In that testimony (See Attachment 3), CMA provided its opinion of the state of compliance with Title III, the impact Title III is likely to have on community emergency preparedness and the reduction of plant emissions, the steps necessary for the EPA to effectively implement Title III, and the steps which CMA is taking to assist in the effective implementation of Title III. No other organization has done as much to implement Title III as CMA.

4. Do CMA members have problems with preshipment inspection programs? What solutions do you propose?

The Chemical Manufacturers Association finds that preshipment inspection creates delays and results in increased costs for exporters which are difficult to quantify. Preshipment inspection companies sometimes review the prices set out in contractual arrangements between the exporter and importer and mandate changes. This is an unwarranted interference in a concluded contract which was agreed upon in arms-length negotiations. As price inspections frequently occur after the product is in transit to the importer, the exporter is seriously disadvantaged in dealing with the preshipment inspection company's unilateral price determinations. CMA believes that regulation of preshipment activities is warranted, but is of the opinion that proposals in the House version of H.R. 3 (Sec. 325) would have been inadequate to meet this need. CMA further believes that, absent an international consensus, the United States cannot unilaterally regulate preshipment inspection activities. Accordingly, CMA has worked closely with the International Chamber of Commerce (ICC) to develop a model preshipment inspection regulation. A copy is included as attachment 4.

5. What are the major positive components of the trade bill for the chemical industry?

The Chemical Manufacturers Association supported the Omnibus Trade and Tariff Act of 1988 vetoed by the President on April 24, 1988. The Association was not supportive of the provision requiring a 60 day advanced notice of plant closings, but felt the positive aspects of the bill overrode our objections to that provision. We are also supportive of H.R. 4848. Specific provisions of both H.R. 4848 and the vetoed trade bill which CMA supports include:

o Renewed negotiation authority for the Uruguay Round,

o Language requiring consideration of the degree to which a product is sensitive to increased imports as a result of tariff reductions,

o Amendments to the Foreign Corrupt Practices Act,

o Removal of the injury test requirement when blocking imports which infringe on U.S. patents,

o Repeal of the windfall profits tax,

o Technical amendments to countervailing duty and antidumping laws,

o Strengthening of procedures for national security import restrictions under Section 232.

6. What are the major positive components of the Canadian Free Trade Agreement for the chemical industry?

The Chemical Manufacturers testified in favor of implementing the U.S./Canada Free Trade Agreement (FTA) both before the Senate Finance Committee and before the Senate Governmental Affairs Committee. A one page summary of the CMA Statement of Principles on the FTA is included as Attachment 5. A copy of CMA's written statement before the Senate Finance Committee is included as Attachment 6.

7. Why do you think imports of chemicals have been increasing -- from $13.7 billion in 1984 to $16.2 billion in 1987?

From 1981 to 1987, chemical imports increased a total of 18 percent. Exports also increased by 18 percent, however, from $22.3 billion to $26.4 billion, widening the trade surplus from $8.6 billion to $10.2 billion.

Within the broader categorization of "chemicals" imports, major increases occured in Sch. 51, organic chemicals, $1.2 billion; Sch. 54, Pharmaceuticals, $.5 billion; and Sch. 58, Synthetic Resins and Plastics, $.5 billion.

Compared to 1980, the Sch. 51 organic chemicals balance slipped 1.1 billion; Sch. 53, Dyes, tanning and color materials by $.6 billion; and Sch. 55, Essential Oils by $.5 billion, while "high tech" Sch. 54 pharmaceuticals, and Sch. 58 Synthetic resins generated modest improvements, $.2 billion and $.3 billion, respectively.

Analysis of the data shows that imports from less developed countries increased only marginally from 1984 to 1987, with imports from Japan increasing about $.9 billion, from Germany $.6 billion, and from the U.K. $.2 billion. In part, the import increases simply reflect the growing volume of world trade, but they are also indicative of increasing specialization and the rising manufacturing capabilities and competitive abilities of foreign producers.

8. What productivity improvements has the industry shown in the last ten years?

Given its highly capital intensive nature, productivity levels in the chemical industry are strongly influenced by the level of output. Productivity may actually fall when capacity utilization declines.

Over the 1977 to 1987 period, however, chemical industry productivity increased by 16.6 percent and we expect further gains this year, perhaps another 2 percent.

9. If much of the industry's exporting success can be attributed to the lowering of the dollar, what strategy will you undertake when the dollar rises again?

> The dollar exchange rate is but one important factor in U.S. ability to export. Others include economic growth rates abroad, global supply-demand relationships, the cost of energy and other raw material imputs, and a number of factors -- for example, U.S. tax and regulatory policies -- that determine the cost of manufacturing in the United States.
>
> The dollar was grossly overvalued during much of the first half of the 1980's, resulting in significant U.S. market share loss in U.S. manufactures exports and in the U.S. domestic market, imposing excessive restructuring on U.S. manufacturing. An important goal of U.S. fiscal and monetary policies should be to avoid a recurrence of this situation.
>
> Should the dollar strengthen significantly, it will increase the already existing tendencies of U.S. chemical producers to move from commodity chemicals to specialty chemicals -- those based on new technologies and less subject to competition primarily on the basis of price. Other things equal, a stronger dollar would likely add pressure for wage restraint and increase the motivation to locate new production facilities abroad.
>
> Whether or not the dollar exchange rate rises, an increasing flow of investment in research and development that will develop new products and investment in the processes, plants and equipment to produce these new products in the United States is essential to the long term health of U.S. manufacturing and the chemical industry.

10. In March of 1986, Business Week magazine did a special report on "The Hollow Corporation". The report talked about the decline of basic U.S. industry and the post-industrial U.S. corporation being basically a packaging and sales outfit. Looking back two years later, do you feel these fears were overstated?

> There has, in fact, been a degree of "hollowing" of U.S. manufacturing over the last few years. Even though available data indicates a consistent rise in U.S. industrial production, a "hollowing" is evident from the fact that the United States in 1987 incurred a manufactures trade deficit equivalent to about 3.4 percent of GNP. With manufacturing representing only about one-fifth of U.S. GNP, it has been estimated that the output of U.S. manufacturing was equivalent to only about 86 percent of total U.S. consumption of manufactured goods. The 14 percent manufactured goods shortfall -- filled by net imports -- was the dominant factor in a 1987 current account deficit of $156 billion and a resultant $139 billion increase in the U.S. external debt.
>
> Obviously, a further decline in the portion of U.S. manufactures provided by U.S.-based production would produce even larger trade

and current account deficits and still larger borrowing abroad. But a further "hollowing" of U.S. manufacturing could not continue indefinitely and, indeed, a reversal has probably begun.

No nation can borrow indefinitely from abroad at rates that significantly raise its debtor position relative to GNP. Sooner or later, international capital flows to the United States will slow or increase in cost, with accompanying effects on exchange rates, relative international economic growth rates, and relative international prices that will narrow trade and current deficits. This process already appears to have begun.

The recent deterioration in the U.S. trade and current accounts was mainly manifested in manufactures trade performance. Indeed, the $153 billion decline in the manufactures trade balance from 1981 to 1987 exceeded the $137 billion decline in the merchandise trade balance over the same period.

Looking to the future, the movement to a balanced external accounts must come essentially from improved manufactures trade performance -- from a reversal of the recent deterioration. There is no other source of significant gains in either "services" or other elements of merchandise trade. The fact is that the United States cannot pay its way in the world economy and run large manufactures trade deficits. Indeed, over the longer term the United States will have to run substantial manufactures trade surpluses to balance its external accounts. The idea that the United States could become a nation of "hollow corporations" was, therefore, not credible. Fundamental international economic forces ensure that the United States will retain a large manufacturing base and that, over the long term, it will not be a net importer of manufactured goods.

Thus, the "good news" is that manufacturing will survive in the United States. The workings of the international economic system ensure that we cannot borrow in amounts that would allow us indefinitely to be large net importers of manufactured goods. Even under poor economic policies, the United States will retain a large manufacturing base and in the longer term, will generate manufactures trade surpluses.

The "bad news" is that the survival of U.S. manufacturing is not the real issue. Rather, the important question is under what terms will U.S. manufacturing survive? That is, how much of the inevitable resurgence in U.S. manufacturing output relative to U.S. manufactures consumption will come from enhanced competitiveness derived from changes in the dollar exchange rate, how much at the expense of lower or stagnant manufacturing real wages, and how much will be achieved by gains in manufacturing productivity and the quality of U.S. products?

To the extent that U.S. manufacturing becomes more internationally competitive through declines in the dollar exchange rate and lower real wages, there will be downward pressure on U.S. living standards. To the extent that U.S. manufacturing becomes more internationally competitive as a result of increased productivity, efficiency and quality, U.S. living standards will be enhanced.

Competition for world manufactured goods markets will get tougher and tougher as more and more nations increase their manufacturing capabilities. The United States, the world's largest market, will be a particularly attractive target for exporters around the world. Today, U.S. manufactures seldom have unique qualities that free them from price-based competition.

In this highly competitive environment, tax and regulatory policies that disadvantage U.S.-based manufacturing in international competition translate to higher prices and lost markets that will be ultimately countered by compensating declines in the dollar exchange rate and downward pressure on real wages and U.S. living standards.

Today's world is more competitive than ever before. To ensure that the U.S. maintains a strong, vibrant manufacturing sector capable of paying good wages and not reliant for its survival on continuing dollar depreciation, it is more important than ever before that legislative and regulatory actions give full consideration to their effects on the international competitiveness of U.S. manufacturing.

Question extracted from test of testimony, page 45:

Do you have any idea as to, and also the use of the by-products, the CO2 by-products of making methanol out of coal? Do you see or are you aware of any interests or discussion about the prospects for making methanol from coal in your industry?

Demand for methanol in the U.S. fuels market has been increasing over the past few years. Much of this increased demand is driven by stricter emission requirements for motor fuels, as established by state programs such as those in Colorado, California, and most recently in Arizona. Increased demand for methanol as a motor fuel used (1) as a raw material to produce MBTE, a motor fuel additive, and (2) as fuel in converted bus and automobile fleets, will likely continue.

U.S. capacity for methanol production is currently maximized, and a small percentage of U.S. methanol demand is met by imports. Most of U.S. methanol production is methane gas-based, rather than coal based. This is due to both technology and economics. Although some pilot projects have demonstrated coal conversion technologies, the economics and relative fuel prices of today's markets make such projects infeasible on a large scale. Current gas prices as well as cheap methane gas supplies from foreign producers, have guided U.S. methanol production to be primarily methane-based. Further refinement of coal conversion technologies, as well as significant shifts in relative world fuel prices, will be necessary before coal-based methanol can contribute to U.S. demand.

The U.S. chemical industry is interested, from an energy security standpoint, in seeing coal-based fuels become a significant component of U.S. fuel supplies. The industry is pursuing coal conversion technologies and has demonstrated coal-to-methanol conversion where subsidies have improved the economics of such projects. However, only if the economics of such technology improve will U.S. methanol production shift from methane-based to coal-based on a large scale. (See Attachment 7)

Senator Rockefeller. The order has been decided on by Senate Staff so, there is nothing that I can do about it. So, Mr. Roly Coppack from Borg-Warner, Mr. Verlon Bradley from Du Pont, Mr. Leon Hebert from Monsanto, and Mr. Albert Walker from Union Carbide, if you could come forward and I would like to get all of your testimony's in succession. And, then, we will proceed to questioning. I am sorry, we did that by company, not by name.

Mr. **Kelley.** Okay.

Senator **Rockefeller.** It turned out to be almost by name except obviously, Coppack and Bradley doesn't work out so, Mr. Coppack, could you begin, please, sir.

STATEMENT OF ROLY COPPACK, VICE PRESIDENT AND GENERAL MANAGER FOR ASIA, BORG-WARNER CHEMICALS, INTERNATIONAL CENTER

Mr. **Coppack.** Mr. Chairman, thank you for inviting me to testify before you today on a topic that is vital to our national economy and to my company, the competitiveness of the U.S. Chemical industry.

My name is Roly Coppack. I am the Vice-President and General Manager of Plastic for Asia, for Borg-Warner, for Borg-Warner Chemicals and we are the global leader in the plastics industry, with world headquarters at Parkersburg, West Virginia.

Borg-Warner Chemicals manufactures plastic pellets at 4 locations in the U.S. including one at Washington, West Virginia and at 6 other locations around the world.

We also manufacture specialty chemicals in Morgantown, West Virginia and petrochemicals at a plant in Louisiana.

Our plastics customers are primarily manufacturers of consumer durable goods including telephones, computers, business machines, refrigerators, small appliances, power tools, and automobiles.

Our customers include nearly all of the major manufactures around the world such as Zenith, IBM, Apple Computer, AT&T, Honda, Ford, Daimeler Benz, Chrysler, General Motors, Hamilton Beach, Black and Decker, Hoover, Phillips, Cannon, Brother, Kodak and Polaroid, just to name a few.

In Southeast Asia, we supply plastics to the People's Republic of China and to Taiwan, Korea, Singapore, and Hong Kong.

We serve these customers from our global network of manufacturing facilities and through export from our various geographies.

Foreign business accounts are about 30 percent of our sales and a significant portion of that is export business from the U.S. to customers overseas.

We are one of the largest exporters in the state of West Virginia.

Our strategic goal is to serve the consumer durable growth industries of tomorrow no matter what they are or where they are located. To do that effectively, we must be able to operate our businesses worldwide in an atmosphere of fair and open competition.

The chemicals and plastics industry is making an essential contribution to the economic vitality of the U.S. The trade balance of our industry was more than 10 billion last year on exports of 26 billion.

Borg-Warner appreciates the work done today by the Congress to further level the playing field in world trade for the plastics industry. We are especially appreciative of the work done by Senator Rockefeller, sir, and his colleagues accelerating the reduction of tariffs for our plastic products, particularly in Korea.

This kind of support has allowed our industry to maintain it's ability to compete in the global market place. And, today, I ask you to consider two points vital to keeping that competitive ability.

The first point is in regard to the oil import tax. So far, the Congress had elected not to impose a tax on imported oil even though there has been considerable pressure to do so and Borg-Warner chemicals applause this decision.

We believe that any measure which artificially changes the normal free market which exist in the chemical and plastics industry will be detrimental to our ability to compete.

While our industry will be hardest hit by a import tax because we use oil and natural gas for raw materials as well as for energy, all American industry would be affected.

An oil import tax would create artificially high energy cost for U.S. manufacturers compared with the cost of energy worldwide.

This would make foreign made products less expensive in the U.S. and significantly hamper the ability of U.S. manufacturers to sell their goods overseas.

In 1984 the study of, by Arthur D. Little, Incorporated suggests that petrochemical and petrochemical dependent manufacturing operations represent about 31 percent of U.S. manufacturing activity. So, you can see that an oil tax would have a far reaching effect.

An oil tax would also costs American jobs. In fact, one study done in 1985 indicates that a $5.00 per barrel import tax would cost America 2.7 million jobs and reduce the real gross national product by 5 percent during the first 5 years of its enactment. The same study indicated that West Virginia could stand to lose 17 and a half thousand jobs as a result of an oil import tax.

The second point I would like to make involves the inner-relationship among trade issues.

We ask that as you work toward refinement of our country's trade policy, please remember that our industry could be the target of retaliatory activity.

Trade actions taken at Warner industry could have negative ramifications in another, including ours.

In summary, I think our industry has demonstrated that we could compete effectively in an open market with anybody in the world. It is also true for Borg-Warner Chemicals. We have worked hard to reduce costs and increase productivity and improve quality. For example, we've reduced the amount of energy required per pound of product produced by one-third, during the past 8 years.

Our people have taken up the challenge to be a world-class competitor and we continue to maintain our global leadership in the plastics industry.

This effort, combined with our support, has allowed Borg-Warner Chemicals and our industry to sell around the world.

Again, I thank you for the opportunity to express opinions on issues of trade and for taking the time to listen to our point of view.

Thank you, sir.

[The following information was subsequently received for the record:]

Responses to Questions by Senator Rockefeller

1. Borg-Warner Chemicals opposes imposition of an oil import fee because of its negative effect on the economy and government revenues. Recent studies by Data Resources, Inc. (DRI) for CMA and PEG show oil taxes are a particularly inefficient way to raise federal revenue. A $5-per-barrel tax on oil imports will generate approximately $10 billion in revenue for the Federal Government. But reduced economic growth, increased unemployment and higher inflation generated by the tax will result in a combined increase in costs and decrease in revenues for Federal, state and local governments of about $21 billion/year. This tax would damage the economy and have a negative impact on the combined budgets of all levels of government.

The Joint Committee on Taxation also reports that if rebates were provided for home heating oil and industrial petroleum use, 90 percent of gross revenues from an import fee might be lost. Even if the tax were applied to all oil, both domestic and imported, the DRI study concludes net revenues would only be about 25 cents per dollar of tax.

In addition, the DRI simulation of a $5/bbl oil tax shows real GNP, investment, disposable income and U.S. exports would go down significantly as compared to the "no tax" case. The ironic result of an oil tax will be to cause serious economic harm, although it is intended to strengthen the economy by shrinking the deficit.

2. Borg-Warner Chemicals has successfully sold plastics to customers in the People's Republic of China for approximately ten years. As in other markets, a quality product at internationally competitive prices is required. A certain amount of flexibility is also necessary to market within the country's rather unique system.

3. Borg-Warner Chemicals is always concerned for the welfare of its customer. If given an equal opportunity, it is our company's experience the U.S. companies can compete and will not necessarily lose market share. It is important that government does not erect tariff barriers to protect American business and thereby cause retaliatory tariffs that prevent U.S. exports.

4. Being able to trade on equal terms without artificial tariff barriers is beneficial to American business and the U.S. economy. The Canadian Free Trade agreement is a major advancement toward this goal of no tariff barriers.

5. Borg-Warner Chemicals' exporting success is a result of the quality and utility of its products, its ability to control costs and its reputation for service. This has permitted the company to successfully compete in the export market when the dollar is both low and high.

6. As third world consumption continues to grow, use of quality products will also grow. Products that have a high value added will continue to enjoy good growth.

7. Continued research and development efforts permit products to be marketed that are unique and that are produced with lower labor input. This combination will permit American companies to produce in the U.S. and remain competitive.

Senator **Rockefeller**. Thank you very much, Mr. Coppack.

Mr. Bradley, of Du Pont, could you bring those mics up close?

STATEMENT BY H.V. BRADLEY, PLANT MANAGER, WASHINGTON WORKS PLANT, DU PONT CHEMICAL CO.

Mr. BRADLEY. Thank you, Senator Rockefeller.

Good morning, I am Verlon Bradley, manager of the Du Pont Company's Washington Works site at Parkersburg, West Virginia. Let me begin by thanking you for this opportunity to give my views on the state of the chemical industry and some of the key issues affecting that industry and the U.S. economy as a whole.

The chemical industry continues to be one of America's strongest competitors in the world marketplace. Perhaps the best measure of the industry's success can be found in the trade statistics which show the U.S. exported $26.4 billion in chemicals and related products last year against imports of $17 billion. Thus, our positive balance of trade was $9.4 billion.

This marketplace performance was reflected in industry balance sheets which over the past year showed a 27 percent increase in net income. That income growth has enabled the chemical industry to further expand investment in R&D, in new plants, and in more modern equipment in order to stay competitive.

These trends give us good reason to be optimistic about our prospects, at least to the extent that the future marketplace winners will be those who are best able to produce innovative high quality products with great efficiency.

My own company, Du Pont, contributed to the positive showing in the international marketplace for chemicals. In the last year, we exported $3.2 billion while our imports, mostly raw materials, totaled $400 million.

We believe that we will be a still more important player in the global economy in future years.

A keystone of our strategy is to be a leader in innovation. To achieve this goal, we presently conduct about $1.3 billion annual R&D program to find and develop the technologies which we believe will be among the most important in the marketplace in the 1990's and beyond.

However, Mr. Chairman, although the U.S. chemical industry generally is performing strongly today, there is nothing inevitable in this trend.

Part of our recent performance was due to the fact that we have just emerged from a period when the overly strong dollar seriously undermined our ability to compete effectively in the world markets. And, of course, today world markets mean U.S. markets as well.

Although the dollar has fallen and our competitive position has improved, it is not yet back to the position we enjoyed in 1980 before the serge in the dollar's strength developed.

Let me say here that I think that it would be dangerous to think of the dollars decline as a silver bullet which will cure Americas competitive woes.

Our trade balance improvements are encouraging but, still far from decisive. We have found that lost market share is not easily regained. And our international competitors, more often than not, have displayed a surprising ability to remain competitive even within new currency relationships.

Indeed, there are a number of troubling economic conditions which could help to undermine the improved international performance not only in my industry but, the U.S. economy as a whole.

To me, the most worrisome of these trends are the twin deficits in the federal budget and in America's accounts with trading partners. I don't have any sure-fire solutions to either problem but would like to propose some general approaches.

On the budget deficit I'm certain that we can fund the necessary, and I underline the word "necessary", level of government services and still live within our means as a nation. This means making choices and saying "No" when we must. I believe that there is a linkage between the federal budget deficit and our problems bringing our trade accounts into better balance. What we do about fiscal policy is important in terms of inflation, the amount and cost of investment capital available, and other issues.

However, we need much more from Washington than budget restraint if we are to turn Americas trade statistics around for the long term. We also need restraint in government mandated costs on business, costs that undermine business competitiveness. Environmental costs are a major issue, here. While no one would argue that adequate environmental controls are not imperative, there are serious questions about some present proposals to expand environmental controls.

One set of proposed changes in the Clean Air Act, for instance, would mandate $32 billion per year, quadrupling air compliance expenditures in the industrial sector. This would be the most expensive environmental bill in history and would offer the public, marginal benefits in terms of air quality and undermine U.S. business in a very serious way.

Senator **Rockefeller**. Mr. Bradley, just interrupting for a moment, could you not for the purpose of the discussion here but, for the record, document somewhat more specifically the $32 billion that you mentioned here?

Mr. **Bradley**. Yes, we'll be able to send you something to document that figure.

Senator **Rockefeller**. Good.

Mr. **Bradley**. Through on that?

Senator **Rockefeller**. Thank you.

Mr. **Bradley**. Thank you.

While there is need for government restraint I also believe that we may need large scale intervention by federal government to put American business on a reasonably fair footing with it's foreign competitors.

Omnibus trade legislation is not the only, or necessarily the best, form of intervention. Adjusting monetary policy to improve climate for American businesses is one excellent form of intervention. Another is demanding strict enforcement of the General Agreement on Tariffs and Trade. If there are compelling arguments for protectionist legislation, there are equally compelling arguments for demanding that our trading partners adhere to international agreements on trade which are already on the books.

And, of course, it's wrong to think that the trade deficit remedies solely in terms of retributive action. There are a number of positive steps we can and should take to improve our trade position. One of these would be the ratification of the Canadian Free Trade Agreement. This agreement requires give and take on both sides, as any treaty must. More than the specific details of the agreement itself, the FTA provides a framework for further liberalization of trade and investment between these 2 countries. And, yet, the overall effect of the FDA almost certainly would be strongly positive for both national economies over the long haul.

History shows that well crafted trade packs lead to increased employment, stronger investment, and higher standards of living for the nations involved.

The Canadian Free Trade Agreement is certainly seen as positive by many of us here in West Virginia. According to the U.S. Commerce Department, this state already exports 67 percent more to Canada than it imports. And under the free trade agreement, I believe our opportunities to expand our Canadian markets would improve.

As you know, any opportunity to improve foreign trade is most important in West Virginia. The latest figures show that about 12 percent of our states manufacturing jobs and more than 15 percent of its manufacturing shipments are export related. I should add that both these figures are substantially higher than the national average. I would urge the U.S. Senate to ratify the pact with Canada. Not only is it a worthy agreement itself, but once ratified, the FTA would send a strong signal to the world trading community.

The message is that the U.S. is prepared to take positive and responsible steps not only to improve its own position in the world marketplace but to improve and expand the marketplace itself.

Mr. Chairman, that concludes my formal remarks and I would be happy to answer any questions that you might have.

[The following information was subsequently received for the record:]

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DU PONT
ESTABLISHED 1802
E. I. du Pont de Nemours & Company
INCORPORATED
P.O. Box 1217
Parkersburg, W. Va. 26102

POLYMER PRODUCTS DEPARTMENT

1988 JUN 23 PM 1:55

June 21, 1988

The Honorable John D. Rockefeller
United States Senate
Senate Dirksen Office Building - Suite 237
Washington, DC 20510

Dear Senator Rockefeller:

Thank you once again for the opportunity to appear before your Subcommittee on Foreign Commerce and Tourism and discuss the state of the chemical industry and trends in the international marketplace. Du Pont applauds your interest in issues of concern to us and we look forward to working with you on productive approaches to existing problems.

During the June 1 hearings, you requested further information on several items for the record. Our responses to your queries are laid out below and in the attached materials.

Documentation of Costs Associated with S.1894. In our testimony, we cited the figure of $32 billion as the projected cost to industry of legislation to amend and extend the Clean Air Act presently before the Senate (S.1894). This figure was arrived at in an independent study prepared for the Business Roundtable. A copy of the study is attached for your information and use.

Examples of Non-Tariff Barriers Du Pont Faces Abroad. Du Pont encounters a wide variety of non-tariff barriers and restrictions to trade and investment in the foreign markets we seek to enter. These can be grouped into three categories:

Strategic Developing Countries. For our planning purposes, several of the newly industrialized countries (NIC's) represent strategic markets. A few examples of the problems we face in some of these countries are illustrative. Protection afforded to intellectual property rights continues to be inadequate in Mexico, Taiwan, Brazil and South Korea. Although the Section 301 case brought against South Korea has resulted in some improvements there, problems persist with respect to the protection of agricultural chemicals Du Pont manufactures. Elsewhere, new laws are poorly enforced or, in the case of Mexico and Brazil, necessary reforms are yet to be made.

In many of these countries, we encounter restrictions on foreign investment. Mexico severely limits foreign participation in the hydrocarbon sector, including "downstream" industries. In South Korea, we have had a major investment project delayed for over two years while repeated environmental reviews -- to which domestic companies in the same business are not subject -- have been requested and then analyzed extensively, with no decision forthcoming.

The post-Bhophal environment in India is quite adverse to foreign investment. Due to the Mehtah, or Sri Ram, decision, manufacturers in the chemical sector are held to be absolutely and strictly liable for their activities. In the event of a mishap, damages would be assessed not on injuries incurred but on ability to pay.

The situation in India is made worse by its being coupled with extremely high tariffs on goods produced domestically, and an extensive program of quantitative restrictions that are administered through India's import licensing program.

We have also encountered restrictions on our exports of U.S.-approved products. For example, Malaysia has banned the use of LANATE, a pesticide produced by Du Pont for "environmental" reasons that appear to us to be unjustified except possibly as a means to protect domestic pesticide producers.

Japan. Du Pont does approximately $1 billion in business with Japan annually, and over the past few years there have been certain improvements in market access there. Certain practices continue, however, to act as non-tariff barriers to entry for important Du Pont businesses. Standards and testing requirements remain a problem for electronic products. In addition, MITI's role in setting industrial standards, exemplified by the "JIS mark" system, poses difficulties for U.S. firms seeking to market in Japan.

Similar problems result from the Japanese "fair trade commissions" and the codes they issue for introduction of new consumer goods into Japan. Often these codes rule out marketing techniques that might be used by U.S. producers.

Japan's copyright laws are still inadequate to protect product areas such as semiconductor chips and video films, both of which are important Du Pont customers. Moreover, registration of trademarks and patents in Japan is an excessively lengthy process, taking 4 to 6 years as compared to 1 or 2 years in the United States.

European Community. Du Pont is favorably disposed toward the European Community's plans to further integrate and harmonize the European market. We would urge, however, that care be taken to ensure that U.S. firms have equal access to this market, through full rights of establishment and reciprocal treatment in the investment area. In addition, access for U.S. exports by firms that may not be established within Europe should continue to be nondiscriminatory. These issues need to be addressed as Europe proceeds toward its "Europe 1992" goals, in order to avoid future problems.

Staggers Act Reform. The Du Pont Company was a firm supporter of the Staggers Rail Act when it was passed in 1980. Our experience over the past eight years has confirmed the wisdom of passing this legislation. The rails are safer, which is of paramount importance to a shipper of chemical products. The railroads are better marketers of their services. We believe that provisions in Staggers allowing shipper-carrier contracts have contributed to this. Shippers have benefited from contracts through stability in rates and lower administrative costs. Also, we have benefited economically under Staggers. Our rail rates on average have risen at less than the inflation rate, while service has improved. This is in contrast to the significant rate increases in the last half of the 1970's which were accompanied by deteriorating rail services.

Du Pont is sympathetic with the concerns of the "captive shippers" because some of our own facilities, including Consolidation Coal Company mines in West Virginia, are shippers. Staggers was compromise legislation. It did not provide total deregulation of the rail system. The ICC retained powers in regulating railroads, particularly in the area of "captive shippers". From our perspective, the ICC has had a carrier bias during the implementation of Staggers. Even negotiated agreements between shippers and carriers such as Ex Parte 445 have been interpreted with a carrier bias by the ICC, as in the Mid Tec case. Absent this bias, there would be little need or support for CURE-type legislation addressing Staggers. And, as has been said repeatedly, the only time the ICC has favored shippers is when there has been pressure from the Congress.

We have been following the legislation proposing to revise Staggers as it moves through the 100th Congress. We have also continued to participate in numerous discussions with the railroads both on a corporate basis and through our several trade associations. We appreciate your personal efforts to try to break the logjam and help us find a compromise all parties can accept. Your current effort with Senator Brock Adams is a valuable contribution to that end.

Methanol From Coal. Du Pont's oil and gas subsidiary is interested in further research, development, and commercialization efforts relative to the use of methanol as a motor fuel. The incentives provided in the proposed legislation to induce auto manufacturers to produce methanol-capable vehicles is a reasonable approach relative to minimizing "chicken or the egg" controversies. It avoids the noneconomic and inequitable "choosing of a winner" fallacy that too often characterizes government intervention in situations such as this. It will help encourage the evolution of a market for economic methanol fuels over time while still allowing all available fuels to compete while being subject to market disciplines.

It is clear that the economics of competing sources of methanol will play a major role in the development of this alternative motor fuel. Conoco's work to date in this area suggests that methanol from natural gas is likely to remain the most economic approach for some time to come. This, naturally, lessens significantly the "energy security" contribution of methanol as the low cost producers will be those having the greatest access to a cheap natural gas feedstock. The Middle East producers are dominant in this regard.

Other potential sources of methanol, such as coal, face substantial economic hurdles relative to competing with natural gas. In the very long run, coal-based methanol should garner a reasonable portion of a methanol motor fuel market. However, it is difficult to foresee developments over the next decade or more that would make coal-based methanol competitive with that derived from natural gas. Hence, we believe that any government efforts relative to methanol from coal should be clearly restricted to basic environmental constraints once this option becomes economically viable.

We hope the above information is useful to you.

Sincerely,

H. Verlon Bradley

H. Verlon Bradley
Works Manager
Washington Works

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Enclosure

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DU PONT
ESTABLISHED 1802

E. I. du Pont de Nemours & Company
INCORPORATED
P.O. Box 1217
Parkersburg, W. Va. 26102

POLYMER PRODUCTS DEPARTMENT

July 7, 1988

The Honorable John D. Rockefeller, Chairman
Subcommittee On Foreign Commerce and Tourism
Senate Commerce Committee
United States Senate
Senator Dirksen Office Building
Suite 237
Washington, DC 20510

Dear Senator Rockefeller:

Thank you for your letter of June 13 raising several follow-up questions to your June 1 field hearing in Charleston West Virginia. Our responses are as follows:

"What allows foreign competitors to keep market share while the value of their currencies is rising?"

Generally speaking, foreign competitors who have maintained market share in the face of the falling value of the dollar have done so through deliberate decisions to take lower margins and profits on their sales abroad. Countries such as Japan, appear to adhere to longer-term marketing strategy of "riding through" changes in relative currency values.

Recently, Du Pont was confronted directly with this problem, in the form of exports of polytetrafluoroethylene (PTFE or granular TEFLON*) to the United States from Japan and Italy. Exporters in these countries failed to make price adjustments for their products despite major realignments of the values of their currencies against the dollar. Du Pont filed dumping actions against the exporters concerned. The cases are in the final stages, but the International Trade Commission found injury, and the Commerce Department determined substantial margins of dumping; e.g., 103 percent in the case of Japanese PTFE exporters.

In addition to marketing strategy decisions, many countries enjoy direct and indirect support for low price maintenance from their governments in the form of preferential taxes, financing rates and utility costs associated with exports. Finally, certain countries tie their currency values to the dollar, thereby prevented or dampening appropriate changes in relative terms of trade that should result from the fall of the value of the dollar.

"How do mandatory costs on business in this Country compare to government imposed costs in other countries?"

Du Pont has not undertaken a comprehensive assessment of government-imposed costs in the United States versus other countries where we maintain a major business presence. A few general observations may be pertinent.

BETTER THINGS FOR BETTER LIVING

With respect to tax policies, we believe that the United States system, post tax reform, remains biased in favor of consumption instead of savings to support private investment. The exact opposite is the case in major competitor countries such as Japan. This problem is compounded by the lack of incentives to undertake new investment in plant and equipment and basic R&D. Government policy makers should study these problems carefully to determine whether United States companies are disadvantaged relative to foreign competitors.

In addition, as I mentioned in my testimony and our initial response to questions for the record, the course of environmental regulation in the U.S. threatens to saddle United States manufacturers with untenable additional costs, in return for only incremental enhancement of environmental values. I refer you again to the Business Roundtable study of the potential costs of Clean Air Act legislation currently pending before Congress.

"Does Du Pont manufacture products requiring export licenses. If so, has there been any improvement in the licensing process during the last two years?"

Du Pont produces a wide variety of products that, because of their technology content or potential end-uses, are subject to export licensing requirements. As you are aware, export controls can act as a major constraint to United States sales abroad. Over the past two years, we have noted substantial improvements in the export licensing process, particularly that portion of it that is administered by the Commerce Department. Freer exports to allied countries, the "foreign availability test", clearer requirements with respect to re-exports to third countries, imposition of deadlines for reviews of applications, computerization, and increased technical staff qualified to assess particular product technology and applications are most notable among these improvements.

Problems remain, however, with the inter-agency review process and especially with Defense Department criteria for exports of certain products regardless of end destination and foreign availability. A measure of difficulty in this area is probably inevitable given conflicting policy priorities of controlling the dissemination of technology and promoting exports. Nonetheless, we believe further improvements in the overall export licensing process can and should be made. Several helpful steps in the right direction are contained in the export control provisions of the Omnibus Trade and Tariff Act (H.R.3, now H.R.4848), and we urge you to support this measure.

I hope the above responses are helpful to you in your efforts to examine ways in which to enhance the competitiveness of the U.S. chemical industry.

Best regards,

H. V. Bradley
H. Verlon Bradley
Works Manager

Senator **Rockefeller**. I appreciate that, Mr. Bradley.

Mr. Leon Hebert of Monsanto, I would be glad to hear from you, sir.

STATEMENT OF LEON F. HEBERT, PLANT MANAGER, NITRO PLANT, MONSANTO

Mr. **Hebert**. Thank you, Senator for inviting me this morning in sharing with you mine and my company's views.

My name is Leon Hebert. I am the manager of Monsanto Company's manufacturing facility at Nitro, West Virginia.

Monsanto's nitro plant occupies a site of approximately 200 acres on the Kanawha River, 15 miles West of Charleston and currently employs about 480 people.

Among the products made there are a variety of rubber chemicals used by other companies to make such rubber products as tires, hose, and conveyer belts.

The time I have this morning I would like to share with you a brief sketch of Monsanto's role in the chemical industry and in particular how my plant fits into the scheme of things. Then, I would like to acquaint you with some issues that very well could impact the viability of Monsanto's Nitro plant.

Monsanto Chemical Company is the largest unit of Monsanto company and in 1987 accounted for more than half of the corporations sales.

The chemical unit is the leading manufacturer of fibers, plastics, and chemicals serving a wide variety of industries.

Each of its divisions is a world leader in the major market it serves.

The Nitro plant is part of the companies rubber chemicals and instruments division. It is the chemical company's most international business. As such, it is the world's leading manufacturer of chemicals to control the vulcanization process and extend the life of synthetic and natural rubber products.

Our products are used wherever tires are manufactured around the world.

We became the industry leader by being the industry innovator and by providing unequaled service.

Although the market for our products is slow growing, about equal that of the GNP, we continue to invest in this business. We are confident that the good business climate in West Virginia will continue as will the positive and constructive attitude of our employees. Long-term, we feel that we are participating in a viable business. These investments, however, are no longer made to build new capacity but instead to improve product quality and plant efficiency.

Why we recognize that in a slow growth market, such investment is risky, it is an essential step to take if we are to deliver more value to our customers and be the most efficient producer in the world.

However, our intention to maintain that leadership in the future is less certain today because we operate in an arena where actions not under our control not only make it impossible to continue as a leader but could even jeopardize our ability to remain competitive.

As I see it, U.S. Government policy, legislation, and regulation should work to enhance the competitive position of the U.S. industries, not to make them uncompetitive.

The products made at my plant are sold into industries that are suffering because of this country's imbalance of trade, specifically, the tire and rubber industries.

For us to survive as a viable business, our customers need open markets for their products. If our customers can't survive competitively, neither can the Monsanto's of this country.

Monsanto is committed to an open but fair international marketplace for trade and investment. Not only is fair trade necessary, but, so is the government policy that addresses the issue of less developed countries, granted these countries have a need to develop industries that can lead to higher levels of employment, but, institutions such as the International Monetary Fund and the World Bank should foster policies that encourage these countries to seek industries in need of capacity, not those where over-capacity already exist.

Often when these countries elect to build plants and develop industry they also close their markets to imports. Although Monsanto supports the U.S. generalized system of preferences program, which provides special trade benefits to LDC's, we need to recognize more quickly when to graduate an LDC that has been developing from the tariff preferences.

Firms operating from countries who no longer need or deserve such benefits quickly gain an unfair competitive advantage in our markets and we should more quickly act against foreign countries who violate our anti-dumping laws.

The current process is to time-consuming to prevent what often proves to be irreparable damage to U.S. companies.

In the error of investing in foreign countries, Monsanto feels that such investments when responding to market forces are a vital and necessary ingredient in a stable growing world economy.

Monsanto's investments outside the U.S. have secured markets which otherwise would not exist for our products, but such investments often face restrictions which local investments do not. We want and felt that no distinctions should be made between local and foreign investments, but, that each should be treated alike. This includes the freedom to repatriate profits, protection for technology and fair rules regarding ownership, participation and control.

In addition, the opportunity for LDC's to secure investment in new technologies would be enhanced if these countries would protect their rights to intellectual property with strong and effective patent laws.

In summary, let me emphasize that Monsanto does not see a single easy answer to the challenge of preserving an open and fair international marketplace for trade and investment. We are convinced that it will require lengthy negotiations with our trading partners.

But to be successful, to resolve the current situation, and bring about open, yet fair, international trade, these negotiations must work toward a long term growth of the trading partners instead of immediate gains.

Monsanto stands ready to assist in a constructive and thoughtful dialogue.

Thank you.

[The following information was subsequently received for the record:]

QUESTIONS OF SENATOR ROCKEFELLER AND THE ANSWERS

Question. Can you give an example of some LDCs that have closed their borders to imports once a plant was built to make these products?

Answer. Taiwan. In the six years since Premier Chemical has produced rubber chemicals, imports into Taiwan of these products were totally banned. This year, token imports are now allowed.

Question. What barriers to trade do you encounter in exporting around the world?

Answer. Imports are virtually banned into Brazil, Argentina, Taiwan and India although some relaxation is available in all cases based on duty drawback if the products imported are re-exported in value-added derivative.

Question. Has the Administration's trade policy been helpful to the industry in terms of its competitiveness?

Answer. We feel that international trade should be given equal priority within the federal government along with defense, foreign policy and other domestic concerns.

Question. Are you familiar with the U.S. and Foreign Commercial Service? Have you taken advantage of their expertise in exporting?

Answer. Small to medium size companies, especially those without international business structures, have the most to gain from the U.S. and Foreign Commercial Service. Consequently, Monsanto does not make significant use of it. Throughout the world, however, we do rely on U.S. Embassy staff for assistance as appropriate and necessary.

Senator **Rockefeller**. Thank you very much.

Mr. Walker?

STATEMENT OF ALBERT WALKER, VICE PRESIDENT, OPERATIONS, SPECIALTY CHEMICALS DIVISION, UNION CARBIDE

Mr. **Walker**. Good morning. Senator Rockefeller, my name is Albert Walker and I am the Vice President of Operations of the Speciality Chemicals Division of Union Carbide.

I am operationally responsible for Union Carbide's plants at South Charleston and Sistersville and for the portion of the institute plant retained by Union Carbide.

I started my career in 1951 at the South Charleston plant and for a brief period of time served as Plant Manager of that location.

We are pleased to have this opportunity to appear before the Subcommittee and we especially welcome your interest in the chemical industry.

At Union Carbide, we are convinced that we can successfully compete in most, if not all, of the markets of the world.

We believe that the U.S. chemical industry, as a whole, is competitive. We have up-to-date, first-rate technology backed by a continuing emphasis on research and development, modern efficient plants, a capable, hardy productive work force and a wealth of developed distribution systems.

These factors all combine to make us strong and viable in the markets of the world. The fact, Union Carbide, like the rest of the industry consistently produces a large international trade surplus is clear evidence that we must be doing something right.

West Virginia is a major source of chemical exports. Union Carbide's export shipments from West Virginia last year exceeded 630 million pounds of product with a value of more than 330 million dollars, an increase of more than 10 percent over 1986.

Our exports of scores of different chemical products went to customers in more than 100 countries, in all parts of the globe.

Based on the shipments for the first 4 months of the year we expect our exports from West Virginia in 1988 to be 10 to 15 percent higher than they were in 1987.

While we are convinced that Union Carbide is well equipped to successfully compete with anyone in its product lines, we are keenly aware that we have to meet the challenges of competition tomorrow and next week and next month. We cannot take anything for granted. We have embarked on several new programs designed to train and motivate our people to successfully compete and to enhance our ability to satisfy our customers with quality products and services.

In recent years we have redoubled our attention to health, safety and environmental protection and we have learned the benefits that come when information about our operations is shared by the community.

The federal government, of course, exercises important influence over our continued ability to compete and we would like to suggest a few helpful things that the government could do and mention a few things that the government ought not to do.

The first item on our list is simple, straight forward, and crucial. Do not permit the Congress to enact an oil import tax.

From our point of view, such a tax would raise our cost for raw materials to levels above the cost borne by our foreign competitors and give our overseas competitors a major advantage they could not gain in any other way.

Because the chemical industry is both research intensive and capital intensive we believe that Federal tax policies that provide reasonable incentives for research and development and that permit prompt recovery of the cost of new machinery and equipment are, over the long term, critically important to the competitive position in the America chemical industry.

Environmental controls impose a significant financial burden on the chemical industry. In most cases, these costs we accept.

Union Carbide and the chemical industry as a whole has supported enactment of the Clean Water Act, the Clean Air Act, RCRA and numerous other environmental statutes.

Nevertheless, these cost do affect our competitive position because they are often greater than the pollution control cost of our overseas competitors.

We are particularly concerned over the prospects for legislation that would impose needless and unreasonable environmental costs that would damage our ability to compete.

One case in point is in the Clean Air Act amendments of 1988 as reported by the Senate Committee on environmental and public works.

The acid rain provision of that bill alone would impose additional cost of about 30 million dollars a year on Union Carbide despite the absence of clear evidence that the cost would result in an equivalent benefit to the environment.

A number of other provisions of that bill dealing with toxic air pollutants also appear to impose controls for the sake of controls, not for the sake of the environment.

We hope members of the Senate will carefully and thoughtfully review the bill before the debate on it is concluded.

Senator ROCKEFELLER. Believe me.

Mr. WALKER. An adequate and competitive transportation system is also critical to our ability to compete, both for markets elsewhere in the U.S. and in the world.

In that connection, we have been especially concerned about the failure of the Interstate Commerce Commission to effectively implement the provisions of the Staggers Rail Act as they related to adequate rail competition for captive shippers.

We hope that your committee will soon be able to give active consideration to this problem.

We would also benefit from a greater stability in Federal requirements and regulations in such areas as Federal tax policy and environmental regulations, fewer changes, greater periods of stability, and a more reasonable time period for meeting new requirements would all enable us to plan better, work better, and compete more successfully.

We also need the assistance of the Federal Government in dealing with some of our potential customers in countries that restrict imports and deny us access to their markets. We have generally found the agencies of the executive branch to be helpful, but, as you know, it takes hard work and consistent pressure to open foreign markets that have long been closed to U.S. products.

That completes my statement. I would be pleased to try to respond to any questions you may have.

[The following information was subsequently received for the record:]

QUESTIONS OF SENATOR ROCKEFELLER AND THE ANSWERS THERETO

1. Question: In your testimony, you ask the government to fight trade barriers and open markets. Can you tell us some specific instances where trade barriers have prevented Union Carbide from making sales?

Response: There are a number of countries, and Brazil is a leading example, which have policies that provide strong protection for domestic producers and which limit competing imports. We have, therefore, found it almost impossible to sell some chemicals into the Brazilian market. We have also had difficulty in selling some specialty products in Japan. In coping with some cases like these, we have had significant help from officials of the Office of the U. S. Trade Representative and the U. S. Department of Commerce in trying to open these markets. Progress, in the face of established policy on the part of the foreign nation, is slow and difficult.

In addition to product specific problems, our exports encounter a variety of trade barriers throughout the world. These include licensing requirements, exchange and financial controls, restrictive business practices, excessive border taxes, sales taxes, exclusive franchise arrangements and others. We are working with the Industry Sector Advisory Committee for Chemicals on means to reduce these barriers during the present GATT negotiations.

2. Question: What are the major positive components of the Canadian Free Trade Agreement for the chemical industry.

Response: The most significant and positive aspect of the Canadian Free Trade Agreement for the chemical industry is the energy portion of the agreement which will make Canadian energy resources, especially petroleum, natural gas, and gas liquids, available to the U. S. market at competitive prices.

3. Question: Why do you think imports of chemicals have been increasing - from $13.7 billion in 1984 to $16.2 billion in 1987?

Response: While we have not annualized the chemical trade trends in full detail, we see two major reasons for this increase: (1) there are many strong foreign competitors who are often able to pick up customers and individual orders on a price basis in a strong market and this accounts for some of the real increase and (2) the chemical market covers an enormous range of individual products, many of which are not produced in the U. S. and are therefore imported.

4. Question: If much of your exporting success can be attributed to the lowering of the dollar, what strategy will you undertake when the dollar rises again?

Response: While the decline in the value of the dollar has enhanced our exports, we had significant exports even when the dollar was at an all-time high. We expect to remain competitive if the dollar rises again, but we hope that stable exchange rates will be a high priority for the U. S. Government and its fiscal and monetary policies. To compete when exchange rates are higher, often means holding market shares by reducing prices and accepting lower levels of profits as some of our foreign competitors are doing now. We can follow that course of action and have in the past in some cases.

5. Question: What barriers to trade do you encounter in exporting around the world?

Response: Aside from the barriers to trade mentioned in our response to Question 1, there are numerous other barriers to U. S. exports, many of which involve normal commercial problems, rather than restraint imposed by government action. These include problems of competitive distribution, lack of markets or market development, and a whole range of different problems in nonmarket economy countries.

6. Question: Are you familiar with the U. S. and Foreign Commercial Service? Have you taken advantage of their expertise in exporting?

Response: Union Carbide people are quite familiar with the U. S. and Foreign Commercial Service of the Department of Commerce and make use of their expertise when we encounter unfamiliar problems. We do not make extensive use of their services because we have a long history of successful export market development in most areas of the world.

7. Question: Do you see growth in foreign acquisitions in the chemical industry as a threat to our domestic security?

Response: We do not see foreign ownership of U. S. chemical facilities as producing a threat to our domestic security. Foreign owned subsidiaries in the U. S. are, of course, staffed almost exclusively with Americans and are subject to the full range of U.S. laws and regulations. A strong U. S. chemical industry is important to our national security and all firms in the country, whether foreign owned or not, contribute to that general strength. Furthermore, there are very few chemical processes or products that are directly related to military security.

8. Question: Do you export any products that require export licenses? In the last two years the Commerce Department has been streamlining its export licensing process. Have you noticed any improvements? Do you have any suggestions for further improvements?

Response: Union Carbide exports a number of products and processes that require export licenses, and we have noticed some useful improvements in the export licensing activities of the Department of Commerce in the last several years. We still see room for further improvements, especially in terms of their speedy evaluation of foreign availability claims.

Senator **Rockefeller**. Thank you all very much. Maybe I will just start out with your last point on the Staggers Act because that's something that we are in fact going to have a mark up, probably going to have a mark up in June, that's this month, isn't it?

Mr. **Walker**. Yes.

Senator **Rockefeller**. And, I would like, briefly, if you gentlemen could explain to me, for the record, about some of the problems that you have with respect to shipping your products, bulk commodities or whatever, with switching joint rates and other things that come under competitive access in the Staggers Reform Act, I would like to hear about some of the problems that you have.

Mr. **Walker**. I can't, from our company's position fully describe an issue. We are members of a pro-competitive rail steering committee. Three items, particularly, are mentioned that we would like the act to address.

Prohibit the cancellation of competitive joint rates and routes as well as competitive reciprocal switching arrangements unless justified by a demonstration of unprofitability. Monitor gateway closings to assure reasonable access to competitive rail service and mandate trackage rights where it can be shown that is in the public interest or when carriers are otherwise limiting access in order to reduce competition.

I think those are all issues that can affect business competitions. I think we see it in West Virginia, in the coal industry and places and that completes——

Senator **Rockefeller**. Would each of your gentlemen agree with that?

Mr. **Coppack**. I am not aware of what it is in——

Senator **Rockefeller**. You are not aware of the problem?

Mr. **Coppack**. No, I'm not.

Mr. **Walker**. I would be happy to give you some information on that, I just haven't been directly involved in this piece of——

Senator **Rockefeller**. Would you, please?

Mr. **Walker**. Yes.

Senator **Rockefeller**. I would like to be able to get your views. There is a, the CURE Bill S. 676, which, in fact, has been modified but that's not so important at the moment that relates to competitive access, joint rates, switching, reciprocal, I mean, there is a lot that's in there and I would like to get West Virginia chemical companies expressing their views on that, if I could.

I don't know where to begin. Mr. Coppack, you've made a somewhat startling statement, I think that I gently drew the conclusion that you gentlemen are not wildly in favor of the oil import fee. You indicated that it would eliminate 17,600 jobs in West Virginia and there are only 16,000 in the entire chemical industry. Now, I just wanted to——

Mr. **Coppack**. I don't think that I said that they was directly related to the oil, to the chemical industry. I am just talking about jobs in general.

Senator **Rockefeller**. Beyond that?

Mr. **Coppack**. Sure, you know, I am talking about all kinds of various levels of manufacturing.

Senator **Rockefeller**. How did you arrive at that figure?

Mr. Coppack. Well, I didn't. It came from a study that was done by Arthur Little in 1984. I would be glad to send that to you.

Senator Rockefeller. I would like to have that.

Mr. Coppack. Sure, sure.

Senator Rockefeller. Mr. Walker, in your testimony you say that Union Carbide can "compete in most if not all of the markets of the world." What non-business factors dictate whether or not Union Carbide can compete in different markets?

Mr. Walker. Well, certainly in some parts of the world we have the phenomenon of the closing of borders where import tariffs are so large that we cannot compete, often where they are manufacturing a product. I think that is the most significant thing that restrains us from being able to compete. We have established a network of sales and marketing offices around the world, we have distribution terminals in most of the prominent developing parts of the world and have the resources and the capability to compete.

Senator Rockefeller. In your testimony, also you note that raising the cost of raw materials here would give your overseas competitors a major advantage. Do you currently face overseas competitors whose governments provide subsidized inputs?

Mr. Walker. I'm not directly sure that that happens. Certainly, I think, in Saudi Arabia where large basic petrochemicals are being produced for the first time and starting 2 or 3 years ago that condition exists.

Mr. Coppack. Well, we do, sir. We face them from Korea, of course, which is——

Senator Rockefeller. Well, could you explain?

Mr. Coppack. Well, yes, the——

Senator Rockefeller. And, please talk up, Mr. Coppack.

Mr. Coppack. Yes, okay, it is hard to hear yourself when you are coming through this microphone but, as we've talked before with the ABS industry in Korea is supported or subsidized, if you will, by the Korean government to the extent that Styre and Moniba which represents half the cost of the product today is sold on the world market at $0.85 a pound, inside of Korea it sells at $0.25. And, then, the government subsidized the differences but when it comes in terms of a product that's made from those kinds of materials well, we have a tremendous disadvantage in cost.

So, yes, we do indeed face, from that particular country, subsidized industry.

Senator Rockefeller. Mr. Bradley, do you encounter barriers to your products around the world, trade barriers, non-tariff barriers?

Mr. Bradley. Well, since we are global and do compete in all markets of the world I am sure that we encounter those wherever they exist. I don't have any specific numbers relative to that but, anything that provides, other than a free trade situation, usually provides some advantage for the home court.

Senator Rockefeller. Would you be able to get or to send me, for the record, examples wherein Du Pont does, feels that it does or does not face either tariffs or non-tariffs barriers in its efforts to export to other countries?

Mr. Bradley. Yes, sir, I would be happy to do that.

Senator Rockefeller. Do all 4 of your gentlemen support the trade bill? Now, remember only the taller microphones are the ones that make the most noise. I'm curious, I mean, we want to get into this subject.

Mr. Coppack. I would support the President's position, I think, in that I support, yes, the overall view of the trade bill but, I do support his position to do with the plant closings. I don't think that that's got anything to do with the trade bill but, that's a personal opinion.

Senator Rockefeller. Do you have in your contracts plant closing requirements?

Mr. Coppack. We don't have a union in any of our facilities in North America and, so, we do not have.

Senator Rockefeller. Would you give notice?

Mr. Coppack. Yes, of course we would.

Senator Rockefeller. You would give notice as a matter of course.

Mr. Coppack. Yes, yes, we would. That would be the responsible thing to do, I think.

Senator Rockefeller. So why is it so difficult if——

Mr. Coppack. I think that responsible people would behave in a responsible way. I don't think it has a power to be in a bill, that's all.

Senator Rockefeller. Well, if responsible people worked in a responsible way, we wouldn't have to have criminal laws in this country, I mean——

Mr. Coppack. I am talking about Borg-Warner Chemicals, that's all.

Senator Rockefeller. I understand that but, I mean——

Mr. Coppack. Well, that's all.

Senator Rockefeller. Why do you support the President's position on vetoing an entire trade bill based upon one plant closing measure which every other industrialized country in the free world has and you know that——

Mr. Coppack. Yes.

Senator Rockefeller. And, which you practice——

Mr. Coppack. Yes.

Senator Rockefeller. And, I think what some of these other gentlemen may have written into their contracts and shoot down an entire trade bill based upon one thing.

Mr. Coppack. Well, it's the philosophical difference, I guess, Senator, I don't know.

Senator Rockefeller. And, are these philosophical differences enough to overcome all of the, to give the President the right to conduct GATT round and all of the rest of it, all of it going down the tubes for one non-trade problem?

Mr. Coppack. Well, I assumed that the Congress will be a lot more rational and the weight will, you know, it will conduct itself from here on in, it will be a compromise made on that bill. I assume that that will happen.

Senator Rockefeller. What other thoughts do you other gentleman have on that?

Mr. Bradley. I think Du Pont supports the veto position as well, although the plants closing piece would not really affect the way that we do business. We certainly, as any responsible company would, give as much notice as possible in that kind of a situation.

That particular piece of it, though, was a bit ambiguous in terms of its intent for lay offs, temporary suspensions and that sort of thing. And overall, it just seemed out of place in that particular bill. There were a lot of positive parts of the trade bill of which we were much in favor, and we would like to see enacted.

Senator **ROCKEFELLER**. Now, maybe I am confused here but, I was under the impression that the Chemical Manufacturers Association supported the trade bill?

Mr. **BRADLEY**. We did. The trade bill per se——

Senator **ROCKEFELLER**. No, the trade bill as passed by the Congress. I am under that impression, I believe that I am correctly under that impression or do you dissent from that?

Mr. **BRADLEY**. You are talking to the Chemical Manufactures Association? Is he still here?

Mr. **COPPACK**. Well, we heard it said, earlier, that they were indeed.

Senator **ROCKEFELLER**. That's all you folks too, though, I mean, you are part of it, right?

Mr. **BRADLEY**. Right.

Mr. **COPPACK**. Right.

Senator **ROCKEFELLER**. You support the veto?

Mr. **BRADLEY**. We support the veto.

Senator **ROCKEFELLER**. Even with intellectual property rights and all of the rest of it put in there, you support the veto?

Mr. **BRADLEY**. Intellectual property protection was one of the very valid needed pieces of legislation. We supported strengthening the 301 portion which goes after the unfair trade practices. We supported the wind fall profits tax elimination, supported trade negotiated authority being accountable to Congress. All of that is very much in order.

Senator **ROCKEFELLER**. I mean, each of you have talked about fair but tough trade or fair trade, whatever, which that bill brought, Mr. Hebert would you, do you also support the veto?

Mr. **HEBERT**. Yes, sir, I do.

Senator **ROCKEFELLER**. And, Mr. Walker?

Mr. **WALKER**. Yes, sir.

Senator **ROCKEFELLER**. Well, I must say that I find this most amazing.

Mr. **HEBERT**. Why does legislation like that have to have plant closing tagged onto them?

Senator **ROCKEFELLER**. Well, because the Congress put it in there.

Mr. **WALKER**. So take it off.

Mr. **COPPACK**. It's a matter of principle, really.

Senator **ROCKEFELLER**. But, why, what if so, I mean, I am just curious about that and this really isn't on the subject of other questions that I want to get to with you.

I mean, business has a philosophical worry or hostility, I guess, towards government in general and I know that you folks are enormously regulated, much more than most industries and I understand that but, there's a, here, the whole point of this hearing and this discussion is the fact that you are truly international. You export. You depend upon others having an open trading system. You recognize they do not. This was an attempt to do something about it. We have not done that, we have not exercised that, we are considered patsies by the rest of the world.

The Japanese, the Koreans, the Taiwanese and the European economic community, they know that America has no coherent trade policy and you in all, I think, agree with that statement. And, then, in the trade bill which is 1,100 pages, only 400 pages had to do with trade. The rest of it had to do with education, with engineers, with advanced technology, with all of those things which hit directly into what you have to have to compete for the future which you have, which has been represented by the Chemical Manufactures Association as being a problem and by Mr. Kelley.

So, all of this down the drain, 600 pages of education and engineering and math and science and intellectual property and all of the rest have went down the drain because of something called plant closing legislation which you would all do anyway, notification which you would all do anyway. I guess you answered that——

Mr. **Bradley**. I think that it is just a matter of principle. Just one more precedent, perhaps, of government intervention in the free enterprise system where normal companies that are responsible, take care of that sort of thing and there is no need for that legislation.

Senator **Rockefeller**. Okay. The Japanese, obviously, are very heavily into research and development. They have a different way of doing it than we do, they can develop consortia, so to speak, very easily. Some of you gentlemen may have visited Scuba City. I mean, the Japanese can put together an entire city based upon nothing but Ph.D.'s doing interdisciplinary work all for the purposes of making a better commercial product. They do not have the problems of going from research to product that we seem to have.

What, in your judgment, is the state of the chemical industry with respect to the kind of people who you are able to attract, their level of engineering training, and your own particular company's commitments to research and development and how you view that for the future?

Mr. **Coppack**. Senator, I would have to,——

Senator **Rockefeller**. Could you, the largest microphone is the one that makes more noise.

Mr. **Coppack**. I certainly would have to bow to the DuPont's of this world. Borg-Warner Chemicals is not heavily involved in basic R&D, we just don't do that.

When we come to the, looking for technology, we tend to go on the outside and buy it. We buy it in Japan, to some degree.

But, certainly Du Pont, I think is probably better able to speak to that than we are.

Mr. **Bradley**. Of course, Du Pont is very heavily dedicated to R&D and have survived by that mode through the years.

I think, in terms of the quality of higher education in the country, I think we think we are getting very good engineers to handle that part of it.

In terms of our long term competitiveness, I think maybe the area of education which needs some bolstering is at the lower levels where we could get more understanding about business and the free enterprise system and the things that make the world work in a competitive way—at the high school level, perhaps.

If you believe in a theory that says, ultimately the success of any organization depends upon the quality of thought that people apply to their task. And, maybe the success of the nation depends on that. The better quality thought that we have generated through our educational processes will certainly bode us well in the future and we need to certainly give education a strong support.

Senator **Rockefeller**. Mr. Hebert?

Mr. **Hebert**. Monsanto does invest heavily in research. Right now the big focus area for us is biotechnology.

Our experience to date is that there have been a good supply of very qualified technically oriented scientists available.

I think that the problems that we heard about earlier this morning are down the road apiece. If our education system doesn't provide the people that we'll need in the future, we certainly would suffer from a deficiency in the education arena. I don't think that we are there today, however.

And, Monsanto really believes that the future is in new products and that we are moving even away from the chemicals, slightly, into the pharmaceutical type business and concentrating a lot of our research in that arena.

Senator **Rockefeller**. Mr. Walker?

Mr. **Walker**. Union Carbide has a corporate value which states technology, leadership in those areas where we do have market leadership and we are dedicated to provide the resources available to meet that objective.

I echo what the other members of this group have said about the people. We are able to attract and get very talented young people. We do realize that the engineering class, chemicals engineers particularly, has dropped rather markedly in enrollment and graduates domestically. And, we indeed also are employing more and more people of non U.S. nationalities as they come to this country and stay, very, very good people.

Senator **Rockefeller**. Mr. Bradley, in your testimony you reflected on monetary policy. Do you think that the dollar needs to fall further or do you think that it's where it ought to be or what do you, what are your thoughts on that?

Mr. **Bradley**. Well, I have no way to really tell what the actual proper equity value is. It has not yet returned us to the competitive position we were in 1980, for instance, before the dollar's strength ran up. I think someone else mentioned the four countries in Asia that peg their currency value to the U.S. dollar sometimes prevent an equitable balance being reached. And that may be more of a problem in the future.

Senator **Rockefeller**. Do all of you gentlemen support the free-trade agreement with Canada?

All Present. Yes.

Senator **Rockefeller**. Why do you think that imports are rising faster over the last 5 years, the 11 percent that I referred to earlier than exports are increasing in your industry? Is that something to worry about or is that simply some kind of an adjustment which will not continue into the future? Any of you are welcome to answer that question.

Mr. **Coppack**. Could you say the statistic again, sir, I didn't quite understand it.

Senator **Rockefeller**. We are importing chemicals in this country at a higher rate from other countries than we are exporting to them. We still have the favorable trade balance in chemicals but, imports have been growing, exports have been growing but, at a slower rate. Is that a subject of concern to you?

Mr. **Coppack**. I am not sensitive to that, I guess, are you?

Mr. **Bradley**. You are saying that the trends are in the wrong direction even though the net balance is still okay?

Senator **Rockefeller**. That's correct. The net's fine, but the trends are in the wrong direction. If they continue, there may be a problem, do you worry about it?

Mr. **Bradley**. I think that it's just a matter of intensified world competition for the global markets and the markets are truly global today. We are competing with many countries that are working from a much different salary and wage base than we are and that's part of the competition. We have to learn to be enough more efficient to offset that kind of negative start.

Senator **Rockefeller**. Any other comments?

Mr. **Coppack**. Well, I think——

Senator **Rockefeller**. Into the microphone, please, sir.

Mr. **Coppack**. Yes. Well, what we have seen, certainly in our industry, Senator, is that the Asians have become so much more competitive in ABS and they are now 2 producers over there who are world scale producers that are on the order of magnitude of the Borg-Warner Chemicals so, yes, it's a concern, sure to see those people coming into the marketplace. Yes, I'm concerned about it.

Senator **Rockefeller**. Yes, sir.

Mr. **Hebert**. I think in some cases, we are seeing an expansion of capacity in the situation where there is already over capacity.

I give you an example from the area of Monsanto's businesses other than rubber chemicals.

Our fibers division has many examples where fiber and yarn plants were built even though excess capacity existed worldwide.

Indonesia and India currently are building tire, yarn plants. China is building acrylic fiber capacity. That's going to only tend to increase a trend, I say.

Senator **Rockefeller**. All right.

Mr. **Bradley**. Probably in the competitive arena I would say another thing, this country has become awakened about quality and I think have started to turn the corner and improve on the quality of our products to compete better with some of them as, for instance, Japan, who got on the quality bandwagon a bit ahead of many industries in this country. I think we have certainly learned to improve productivity. In our plant in Parkersburg, we have more than doubled the productivity in the last 5 years in terms of pounds produced per person. We export about a third of our product that we produce in Parkersburg. It's about a billion dollars a year in market value.

Senator **Rockefeller**. I was talking earlier about the 2 ways of rationalizing or becoming leaner and more competitive and one is the more obvious one is you cut down, you invest in new machinery which in turn, or in new technology, new machinery which replaces people so that labor costs are down and there's a school of thought, which as indicated earlier which says that American industry generally is quite satisfied about what they have done on that and there is another school of thought which says that that isn't going to work much longer, that's only the first adjustment that has to be made.

The second adjustment has to do with sort of an almost instant response to customer requirements.

That is a very fast turn around on technology which turns around pretty fast anyway and being much more sensitive to consumer demands on a worldwide, nationwide basis.

I find that a very interesting discussion which we can't carry on here. I wonder if any of you have comments on that? That is machinery replacing people therefore you can say productivity is higher because there, you know, it works out that way as opposed to, let's say, maybe a larger meaning of efficiency and competitiveness which would mean simply really fast response to international chemical consumer requirements. If you understand my question, I don't think that I did it very well but, I know what I am thinking at least, it is not what I am saying.

Mr. **Hebert**. Let me try to answer that.

Senator **Rockefeller**. Often the problem is with politicians.

Mr. **Hebert**. In my plant, as an example, we recently approved $18 million to modernize the facilities.

Yes, that's going to result in a fewer jobs, like 50, but the other side of that coin is we also got along with that what I call modernized work practices, from our employees so that together, we're going to have a work design in our plant to make us the most competitive in the business that we serve.

From that point, then, we can respond to our customers' needs and we say that the future of our business depends on us having something added to the value of our product for our customer and that's going to be either service or quality.

Okay, we have got a technical edge in the quality arena so we are working on service and quality in being responsive to their needs on a very, very short time basis.

Senator **Rockefeller**. Do you feel that the chemical industry, as a whole, is really doing this in this country at large?

Mr. **Hebert**. I think that we've started, I think that it's only just begun and I think we've got a ways to go but, I think that we all recognize that if we are going to be competitive, we've got to do it.

Senator **Rockefeller**. Okay, yes, Mr. Bradley?

Mr. **Bradley**. I think that we have to, in order to maintain our standard of living. We have to give our people, who are in a higher wage and salary base than many other countries of the world, the tools that enable them to earn the equivalent productivity to basically earn our wage and salaries that we have in this country.

Now, when you do that through automation, computerization and that sort of thing, it's not always overall manpower reduction because somewhere they are building the computers and the automated packing facilities. You are creating different kinds of jobs and moving them around perhaps. But if we don't modernize and computerize to stay competitive in terms of total cost to the product, then other countries will wind up taking our business.

Senator **Rockefeller**. I am going to ask you a self serving question.

Do you gentlemen feel that West Virginia would be well served by having a trade office, full-time in Japan?

Mr. COPPACK. Absolutely, absolutely.

Senator ROCKEFELLER. Do all of you feel that, Mr. Walker, I don't know what that is.

Mr. WALKER. Yes, I really can't comment on that.

Senator ROCKEFELLER. You can't comment, all right.

Mr. WALKER. No.

Senator ROCKEFELLER. I have many other things that I would like to discuss with you. Let me close with one more and that is methanol. I'd like, actually, I would like to do advanced ceramics, too, but I won't today.

Methanol has to be a part of our nation's future or else we are crazier than we appear to be. We have 180 million American cars or cars driving around using gasoline. As I said, a third of our trade deficit and it is just crazy. We have unemployed coal miners in West Virginia. We have unemployed farmers in the Midwest and, the question is, we are going to pass a methanol bill in the Senate which is going to cause, in Congress which is going to cause Detroit to start producing what they call "flexible fuel vehicles" which can use gasoline, methanol, ethanol or any combination thereof.

The automobile companies have agreed to this. They opposed it last year but, they understand that the Japanese are moving rapidly on the subject now. And, the Japanese are taking dead aim on California and the 27 million people that live there and their ozone problems and their state legislature's interested in doing something about it so this year the automobile companies favor that. Now, I had them in my office and they are an entirely different group of people in their attitudes than they were last year.

Somebody's got to make methanol. Now, natural gas is one thing, that's going to be the first part, and we all understand that and a lot of that will come from flared gas from Alaska and, you know, we shall see on that.

Obviously, in West Virginia we want to see coal play in the methanol area as soon as possible. That depends upon technology.

Eastman Kodak has a methanol car fueled by coal. When I drive around West Virginia I have a car that runs on methanol fueled by coal which I have to get from Tennessee.

It is said that chemical companies are a very good prospect for doing the research and the technology and the development to develop methanol made from coal and that it is the wave of the future. It is going to come because we cannot sustain these oil imports. And, both gas and oil eventually, of course, are finite.

Are any of your companies or other companies that you know of in this state or elsewhere interested in taking on that as a project?

Mr. COPPACK. Don't know. I can't answer that.

Senator ROCKEFELLER. Well, tell me something more than don't know.

Mr. BRADLEY. I would guess that there is some research already under way on that through Dupont's Conoco and Consolidation Coal operations, but I don't know the status of that development because I'm in a different wing of the business.

Senator ROCKEFELLER. The—yes, sir.

Mr. **Walker**. Our company is doing some work on methanol because methanol, a synthesis of methanol goes back to the beginning of the petrochemical business and we know how to make methanol and methanol is produced very economically from natural gas, getting the synthesis gas, the CO and the hydrogen, to combine catalytically.

The barrier is obviously the tremendous investment that it requires to handle and treat coal and put it into a form to then be reactive for methanol, and that is where the work really needs to be done.

We saw the action with synthetic fuels and I think we are talking about the same thing.

I don't know the value of oil by a barrel; I used to think $40 but it's probably higher, that oil really has to get to before these kinds of alternate supplies really become economical for the private sector. To me, that is the biggest barrier. I think we need to do work now because one of these days, as you say, it is a finite resource, oil and gas and we will need it.

Senator **Rockefeller**. Well, then, let me ask, what would motivate chemical companies to get interested in making, in doing the research to find out how to make methanol from coal?

In other words, the automobile manufacturers are going to start producing the automobiles. Somebody is going to do it. The consumer is going to find out about it. The consumer is going to like it because it's a higher octane, it's a, it has a faster kick, more of a kick to the car and it's only $100 or $200 more in terms of the car as far as Detroit is telling us so far. So, somebody has going to start making this fuel and I agree with you on the natural gas that there are many that can do that.

But, natural gas does not last forever just as oil does not last forever and somebody has got to be looking at this question of who is going to be doing the research on how to reduce coal to methanol.

Perhaps what I could ask is from each of you gentlemen and your companies, the statement for the record about how you view that.

Mr. **Coppack**. Well, I don't know. It seems to me that the industry that has the most to lose is oil industry, therefore, they will be the one who would be most interested in doing the research. I don't know, maybe that's too simply stated but——

Senator **Rockefeller**. Well, does the oil——

Mr. **Coppack**. It seems they would have the most at stake, wouldn't they Senator?

Senator **Rockefeller**. They might——

Mr. **Coppack**. Yes.

Senator **Rockefeller**. But, on the other hand I would think that chemical companies would be able to use some of the by-products that come out of that reduction process. But, let me, if I could just ask you to respond, for the record, because these hearings are for the record, they build a record that helps Congress take action. Yes, sir, Mr. Bradley?

Mr. **Bradley**. We will respond by correspondence on that subject. I know we support your bill but having both Consol Coal and Conoco Energy Companies, it's a mixed bag for us but I'm sure that it's a matter of timing. You're trying to stimulate some activity now to be ready when the market develops and I'm sure that we are interested in the same objective.

Senator **Rockefeller**. Gentlemen, I thank all of you very, very much for taking the time and I am grateful to you.

[The following information was subsequently received for the record:]

Borg-Warner Chemicals,
Parkersburg, WV, June 10, 1988.

Hon. John D. Rockefeller IV,
Senator, State of West Virginia, Hart Senate Office Building, Washington, DC.

Dear Senator Rockefeller: Thank you once again for inviting Borg-Warner Chemicals to testify before the Foreign Commerce and Tourism Subcommittee of the Senate Committee on Commerce, Science and Transportation on June 1 at the University of Charleston.

In response to your request for supporting information on an oil import tax, and statements for the record on two other issues, please find the following attached.

First is an article [1] from the March, 1987 issue of "Data Resources U.S. Review." This article, titled "Energy Taxes: Still Not A Good Idea" reviews a DRI model of the economy with a $5-barrel tax on imported oil. The study indictes that 3.252 million jobs wold be lost in the U.S. during the first five years of the tax. Extrapolating the effect on West Virginia using Commerce Department Employment Data, we see that the 17,600 jobs lost in the state would be well within reason.

I have attached separate statements on methanol and Senate Bill 676, the Consumer Rail Equity Act.

Thank you again for the opportunity to make our opinions and views known.

Sincerely,

Roland Coppack.

Attachments.[1]

SENATE BILL 676, THE CONSUMER RAIL EQUITY ACT

Borg-Warner Chemicals supports the concept of deregulation in the nation's railroads, and supported the deregulation goals of the Staggers Rail Act of 1980.

However, because some companies at the end of rail lines might be "captive" users, we urge that legislation passed invoke some form of competitive access provision.

METHANOL AS AN ALTERNATE SOURCE OF FUEL

While Borg-Warner Chemicals has no official position on methanol as an alternate source of fuel, it is our feeling that efforts to identify and define alternate sources of energy supplies are vital to the energy security of the nation and beneficial to the public good.

Senator **Rockefeller**. Our final witness is the President of the AFL–CIO in West Virginia, Joseph Powell and Mr. Powell we are grateful that you're here and would welcome words of wisdom.

STATEMENT OF JOSEPH POWELL, PRESIDENT, WEST VIRGINIA LABOR FEDERATION

Mr. **Powell**. Thank you, Senator. I appreciate very much the invitation to be here. I don't know that I have much to add to what's already been said but, nevertheless, I will forge ahead. I might also indicate to you that having been involved in the glass and steel industry that the past 5 years of stagnation on exports and increase on imports in the chemical industry ought to worry us all because that is the first stage of the destruction of industry in this country.

It must be recognized that the chemical industry is not unlike many other American industries in that they are forced to compete with nations that subsidize products being manufactured for marketing in the United States as well as competing in foreign markets.

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[1] The attachments were not reproducible.

It is unfair to American industries that do not enjoy such an advantage. However, these circumstances are obvious and well known.

There is an aspect of international competition that is especially apropos to the chemical industry. That is the environment.

As an example, we would point to the rapid deterioration of the ozone layer over the South Pole. That layer has long been recognized as natures shield against the harmful effects of sun upon the life on this planet.

The U.S., in an effort to contain and stop further deterioration of the ozone layer has acted responsibly in mandating controls of fluorocarbons in products such as spray cans and refrigeration units.

These controls have mandated the chemical industry to engage in additional research and development of alternate components for such products. This increases the price of the products on the international market and makes U.S. products less competitive against those manufactured in countries with little concern about the effects of a product upon the environment in future generations.

These foreign products should not be allowed to even be sold in the U.S. much less with a price advantage created by foreign apathy.

Furthermore, mandated safety standards in the chemical industries that are designed to not only protect the world environment but, to protect its workers dealing with hazardous subjects and the consumer who uses them in various ways do increase the investments and thus the cost of the product on the market.

However, such safety standards are often ignored by foreign producers who avoid the cost of implementing such standards to undersell American products at great risk to the health and welfare of the people.

One other issue that should be mentioned as it relates to the chemical industry is the situation involving in Maquilladora (phonetic) plants across the U.S.-Mexican border.

These twin plants as they are known because there is a plant, usually a warehouse facility, located on U.S. soil and an assembly plant in Mexico.

Chemicals and waste by-products are routinely dumped in Mexico which has lax standards of control.

In one study involving 400 Maquilladora (phonetic) plants in Mexico, the chemical refuse of 389 plants was simply slushed down the drain, dumped in remote areas or stored on back lots. Some 5,000 tons of it just in the area of Ciudad Justrez.

The lack of adequate controls in Mexico force industry to act responsibly and makes production in Mexico much cheaper. Sometimes these wastes are dumped and allowed to flow back into the United States.

Thus, we pay with our jobs to allow companies to pollute part of the nation as well as the host country and we encourage the compounding of property in Mexico.

Mexican workers are hurt because they are not paid enough to ever climb out of their poverty and everybody is hurt environmentally.

The U.S. chemical industry rightfully faces stringent regulations under the Clean Air Act, the Toxic Substance Control Act, the Resource Conservation and Recovery Act, Superfund, OSHA, and the CFL protocol.

These are regulations essential for a healthy environment and the safety of our workers and citizens and do have worldwide implications.

Competitiveness of American chemicals and chemical products should not be penalized by those entities that are willing to jeopardize international help in order to enjoy unfair advantage in the marketplace.

Competitives can also be enhanced by government, by encouraging research and development funding, and to keep our industry in the vanguard of improved and new products and by assuring patent and intellectual property rights.

Government policies must be constantly updated to insure that they achieve the desired social, political, and national security purposes and to the extent possible, to support competitiveness.

Thank you.

Senator ROCKEFELLER. Thank you, Mr. Powell.

It is the position of the AFL–CIO, I believe to oppose the free trade agreement with Canada?

Mr. POWELL. That's true. Also, the Canadian workers also oppose it.

Senator ROCKEFELLER. Now, in the case of the chemical workers, if you are going to have a lower energy cost which could therefore potentially make us more competitive and in that the Canadians tend to have higher tariffs than we do and therefore as those tariffs decline what we gain is relatively more than what they gain, why are not the chemical workers served by a Canadian free trade agreement.

Mr. POWELL. Well, I think that it is a direct attack on West Virginia because you are talking about a transfer primarily of electricity, I presume, and of course, West Virginia is in the forefront of generating electricity for the Northeastern portions of the state.

Senator ROCKEFELLER. Now, Mr. Powell, I am not talking about that, I am talking about the chemical workers. I am not talking about electricity and the whole question of coal.

Mr. POWELL. Well, it's all interrelated because we're, you know, we are talking about overall situation and the end result would be that workers would suffer in both countries. We would be hurt by the wood industry in Canada, perhaps our chemical workers would gain but, the overall effect, it is felt by both the Canadian and the American worker is that it would have a detrimental effect on the standard of living of workers in this country and Canada.

Senator ROCKEFELLER. But, with regard to chemical workers alone, would you say that perhaps they might benefit from that agreement?

Mr. POWELL. It's awfully difficult for me to agree to that, I guess the statistic would prove it but we are called international unions because we have unions that protect workers in other countries, particularly Canada. And the overall feeling is that it would end up lowering the standard of living for a great many workers in this country, perhaps, at the advantage of a few.

Senator **Rockefeller**. Mr. Powell, with respect to not engineers, but with respect to the people who work on the plant floors, day in and day out who may not have, probably don't have a college education, but who have grown up with the chemical industry and have done the work of the chemical industry in this valley and around this state for years.

How well are they prepared in your mind, in your judgment, for the tremendously rapidly changing technology. How well are they prepared to adjust to that and what do you think that chemical companies are doing to help and what is the labor movement doing to help?

I didn't really phrase that terribly well, I admit. There is a problem, I think, in this country wherein there is a lot of people who have jobs, now, in fact, this is one of our, one of the parts of the trade bill, where we have work place literacy.

That is people who are in the work place, who have jobs but, you can almost bet that 3 or 4 years down the line those jobs aren't going to be there because the technology will have changed and that they may not have the underlying skills, mathematical skills, communication skills, verbal skills, reading skills or whatever to make the adjustment to the new technology.

Mr. **Powell**. That would be mixed bag because there would be some that would have the education and the ability to make an adjustment. There would be some, of course, that couldn't and the part of the trade bill that would provide funding for retraining is certainly an essential part.

Don't sell the worker on the floor short. The Japanese found out that by bringing workers into the decision making process and allowing them to make suggestions on improvements and efficiencies they became extremely competitive and it's now what they are bringing to this country in their management techniques.

So, I would indicate that with the trade bill and the funds for retraining the government ought to have a portion of responsibility and that it certainly should serve the chemical industry or any other industry in this country that is being attacked by foreign firms, and should serve them well.

Senator **Rockefeller**. I will throw you up something of a softball here. Were you surprised by their reaction to the plant closing legislation, the foreign managers?

Mr. **Powell**. It reminded me of the lemmings lock stepping into the sea to die. I just don't understand it, particularly in view of the fact that the Wall Street Journal editorially indicated that plant closing legislation wasn't a bad stipulation. All industrialized countries have some sort of protection for the worker and believe me not all corporate entities are so-called responsible citizens. Otherwise, we wouldn't be attempting to put that into the legislation.

There's a great Christmas tree there. I think that most of the people in this country look upon that trade bill as something for the workers of this country and it does have that in it but, it is one hell of a Christmas tree filled with presents for the business community. They don't want to take a 60 day responsibility for informing a worker that his job is going down the tubes. And, I just find it appalling that an industry that stands so much to gain from the Trade Act would be willing to jump off the cliff, into the sea.

And, I certainly hope that we can override the veto.

Senator ROCKEFELLER. I don't think that we are going to be able to. In fact, I think there will be, there will be much greater pressure on some, on, as I would say, as a Democrat, the other side of the aisle who voted for the trade bill to vote to sustain the President's veto as Republicans.

And, so, I suspect that it won't be 63, you need 67. My guess is that it will be less that 63 votes for the trade bill.

Mr. POWELL. Well, that's discouraging to hear. After hearing the presentation of how philosophically they oppose the plant closing bill.

It would be easy to be vindictive and indicate then that you ought to shut the whole bill down, but, that's something I don't think that we can possibly afford.

And, in addition, the trade problem of this country does have to be addressed. If the trade problem isn't addressed quickly it means more lost jobs and more economic despair and economic violence in this country and we can't afford that.

However, it's just inconceivable to me that a simple 60 day closing notice has aroused all of the opposition to what essentially is a good bill, primarily for business with a few trinkets thrown in for the labor movement.

Senator ROCKEFELLER. Mr. Powell, over the years you've seen labor-management relations change and evolve in this state. What have you seen evolve in the chemical industry, in this state, over recent years with respect to labor-management cooperation?

Mr. POWELL. Well, in the chemical industry there has, I think, been an awareness that both labor and business is under attack. Various, I hesitate to say it, accommodations have been made in regards to work rules and sometimes not without outside pressure, you understand.

But, there has been a general awareness on behalf of the entire labor movement, chemical industries and others that we are in a situation where we have to work with management in order to survive. And, it's been a slow process but, has evolved in many industries. It's not the happiest of times but it is necessary in view of what has happened to the economy in many industries in this country.

Senator ROCKEFELLER. Do you feel that that evolution is progressing more in chemical than in other industries as a whole in this state or is it a general progression across the board?

Mr. POWELL. I think that it's a general progression but, it's a common thing but, it's not something that holds true in every industry or in even plants of the same industry.

Senator ROCKEFELLER. What can organized labor do now when somebody is displaced through foreign competition?

In other words, the worker is laid off, under the current law the worker can get unemployment benefits, under the current law, the worker can get no federal training money whatsoever until the unemployment benefits have expired, which is 6 months, in the trade bill that was rectified so that workers could get training monies more quickly. That is almost immediately so that they don't have to sit around with all of the problems of being out of work and strife at home and alcoholism and the general downward spiral.

The veto is out there, if the bill is vetoed, I don't think that we are going to be able to override it. Whether or not the Congress will be able to or will decide to come back or not is not clear. It's not at all clear.

What does the labor movement do in the meantime with workers who are displaced?

Mr. POWELL. Well, we do what we've been doing in the past. We've helped where we could. There's been, as you know, labor has community services committees that do all that's possible to soften the blow but, there's not a terrific amount of money as far as funding is concerned.

Unemployment, once again, we treat unemployment in this country more drastically and with more economic violence than other industrialized countries. Even though employers complain about 6 months, we just don't treat our worker's properly, graded against other industrialized countries.

So, it is a terrible situation. It has been, in the past, a real waste of manpower that you haven't been able to qualify for programs until you were out of unemployment benefits. It's also true that with unemployment benefits that you could not continue your education in colleges and universities, but you could go to vocational schools, that's an injustice.

I think the trade bill did make a good start even though it wasn't a tremendous amount of money, it would have been the money that could have retrained workers and prepared them for other vocations. So, that's lost and I don't know what will replace it.

Without money you can't do much for the unemployed, you can't do anything for training and certainly industry does not provide those kinds of funds. They may train their own people but they don't retrain the unemployed worker.

Some enlightened companies have set up a brief program to help people find other jobs but they do not put any worthwhile money into these projects.

Senator ROCKEFELLER. That trade bill would have produced up to 500 million dollars for that purpose of retraining which is quite substantial.

Mr. Powell, is there any other statement or points that you would like to make?

Mr. POWELL. No, just to repeat. We are disappointed to hear that the trade bill veto will not be overwritten, that's tragic and it's particularly tragic in view of the reason that supposedly it has been vetoed.

Thank you very much, Senator.

Senator ROCKEFELLER. My own theory on that, incidentally, Mr. Powell is that, is that when the original bill went out it had a much more stringent plant closing legislation, and the President and many industries locked on that in a negative fashion.

And, then, there were enormous compromises that were made over a period of months with respect to the number of days, as to the size of the company, suits by workers were literally made impossible and it was compromised and then even in the conference committee it was then further compromised but that the President and others had so locked into their negative reaction at the very beginning that they couldn't deal with the reality of the compromise. This is in fact the way Congress often works and the compromise, which I think is genuinely a useful one, and the President almost had to use that as an excuse, he might of had other things he actually didn't like in the trade bill either but I found it interesting that in his veto message he found it necessary to say that worker notification is humane, it's the right thing to do. And, then, vetoed the bill. All of which, I think is a, has been a rather extraordinary process. I think you and I probably share the same view on that.

Mr. **Powell**. Well, I know that we felt the plant closing part was really a very weak solution as far as how it finally passed. As you indicated, it started out much stronger and there were compromises made all along the way. And, I think the Wall Street Journal pointed that out, that, what they were asking of companies, in regards to plant closing notification was very meager compared to what other industrialized countries did and yet we find a great deal of opposition to it.

Senator **Rockefeller**. Mr. Powell, I thank you and I thank all who have participated in this. Roger Fortner, I am glad that you were here throughout.

I thank the staff of the Senate Commerce Committee that helped in the preparation of this. I am grateful to Ira Wolf for his help.

The, I might just say, something that won't surprise you, Mr. Powell that the person that wrote the Wall Street Journal article, Walt Mossburg is Ira Shapiro's best friend. That's just a little code word that doesn't mean anything at all.

This hearing is adjourned.

[Whereupon, at 1 p.m. the hearing adjourned.]

[The following information was subsequently received for the record:]

West Virginia Labor
Federation, AFL-CIO

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JUN 23

June 21, 1988

The Honorable John D. Rockefeller, IV
United States Senate
724 Hart Senate Office Building
Washington, D.C. 20510-4802

Dear Senator Rockefeller:

In response to your follow-up questions to the Foreign Commerce and Tourism Subcommittee's hearing on Competitiveness, the following applies:

1. Do you find that your members employed in the chemical industry are concerned about low-wage foreign competition?

   Answer--Yes, the membership in the chemical industry is very concerned about the low wage foreign competition since it is constantly brought up by management personnel at negotiations and during conversations with union officers about local union concerns.

2. In dealing with foreign-owned companies, do your local unions have trouble obtaining reliable financial information from public sources?

   Answer--It is virtually impossible to obtain reliable financial information from public sources about foreign held corporations. It is difficult to acquire information on American-owned companies, but when another layer appears as it does with foreign investment, such information is impossible to obtain.

3. There have been many takeovers in the chemical industry the last several years. What impact have these acquisitions had on your members?

   Answer--The takeovers and mergers in the chemical industry or any other industries cause workers to have concerns about the future as regards their employment. Having witnessed takeovers, buyouts and sellouts that have occurred over the past several years, all workers are concerned about the loyalty of corporations to the workers. Although corporations and businesses place a high priority on the loyalty of their employees to the parent corporation, it has now become apparent that it is no longer a two-way street and that the big time players worry only about immediate profits or at the top level, golden parachutes. Naturally, that has a devastating effect upon the work force.

Thanks for asking.

Sincerely,

JOE

Joseph W. Powell
President

RHÔNE-POULENC

RHÔNE-POULENC AG COMPANY

September 1, 1988

The Honorable John D. Rockefeller, IV
Chairman, Subcommittee on Foreign Commerce
and Tourism
Committee on Commerce, Science and
Transportation
428 Hart Building
Washington, DC 20510

Dear Mr. Chairman:

Thank you for this opportunity to provide written comment on the issue of competitiveness of the U.S. chemical industry.

I am Manager for Export Services for Rhone-Poulenc Ag Company, a division of Rhone-Poulenc Inc., which is headquartered in Princeton, New Jersey. The company is the wholly owned subsidiary of Rhone-Poulenc S.A., France's largest chemical company. U.S. government policies as they affect the chemical industry are obviously of great interest within the company on both sides of the Atlantic.

Rhone-Poulenc Inc., is a rapidly growing company with sales projected for this year of $1.3 billion and 5,800 employees at 40 facilities located in 21 states. Rhone-Poulenc Ag Company, is headquartered in Research Triangle Park, North Carolina, with manufacturing facilities at several locations around the United States its largest facility being the Institute, West Virginia, plant. Products of Rhone-Poulenc Ag include insecticides, herbicides, fungicides and plant growth regulators.

As Manager of Export Services my responsibilities include managing approximately $140 million of agricultural product export sales to various overseas customers. I also provide technical services to our international business including representing Rhone Poulenc to the World Bank, U.S. AID and other multi-lateral development organizations.

The actions and policies of the federal government are of obvious importance to the health and continued viability of the chemical industry. Trade policy, environmental protection, regulatory and fiscal policy all exert tremendous influence on the ability of companies to remain competitive.

I would like to offer some suggestions about export promotion opportunities, an area with which I am most familiar.

In September, 1961, the Foreign Assistance Act combined the International Cooperation Administration, the Development Loan Fund and other U.S. assistance functions. One month later, the Agency for International Development (AID) was created. The Congress has shaped and reshaped AID over the past 26 years, each time adjusting it to meet new challenges and learn from past mistakes.

In 1973, the Agency took on a new direction in development assistance -- to meet basic human needs. In 1975, four well known environmental organizations helped reshape AID by bringing suit to stop the provision of pesticides to developing countries that had been cancelled for use here. In early 1978, AID amended their two year old environmental regulations to include final pesticide regulations reflecting a new and tougher pesticide policy which de facto eliminated the supply of U.S. produced and U.S. Government approved pesticides to AID recipients. The net result was other products, often less suitable than their U.S. counterparts were supplied by foreign donors to developing countries. AID policy therefore hurt not only U.S. suppliers but also the country requesting U.S. pesticides.

Much has happened to justify a reexamination of AID's policies and procedures that have not changed since 1978.

PO BOX 12014. 2 T.W. ALEXANDER DRIVE
RESEARCH TRIANGLE PARK, N.C. 27709
(919) 549-2000
INTERNATIONAL TELEX NUMBER 4999378 - ANSWERBACK APC RTP
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I would like to comment and offer suggestions on two specific areas for AID policy improvement. Each could, if adopted after adequate public deliberation, assist responsible U.S. manufacturers of agricultural chemicals in marketing their products in AID-assisted countries and bring improved pesticide management and agricultural development to those countries.

Pesticide Procedures

The first has to do with what is essentially, an effective prohibition against providing any pesticide without it being targeted to a specific project. In AID parlance, this is known as non-project assistance through the Commodity Import Program.

AID's current stringent environmental regulations have succeeded in closely regulating the export of pesticides to developing countries. Since the regulations were promulgated in 1978, AID has gained much experience in the selection and provision of chemicals as components of project assistance. It is now appropriate for AID, in concert with environmental organizations and the private sector, to review these regulations and to identify ways and under which conditions, the provision of pesticides as well as other agricultural and manufacturing chemicals could be facilitated to support development purposes.

One way, would be to permit developing countries to acquire U.S. chemicals under the Commodity Import Program once they have adopted an effective pesticide registration and regulatory program that keeps improperly labeled and packaged chemicals from entering the country, being misapplied and negatively impacting the populace or environment.

Countries meeting pre-determined criteria could once again be eligible for acquisition of U.S. approved products under the Commodity Import Program. Inasmuch as adequate pesticide regulations would apply to products from all exporting countries, citizens would receive the benefit of safer and more effective products and U.S. manufacturers would benefit from renewed export assistance from AID. Many U.S. manufacturers actively train third world researchers, crop advisers and farmers in the proper use of our products. Further U.S. manufacturers are often better equipped to service their products than are the various brokers, agents, trading firms and generic producers who rush in to fill the vacuum created by our absence. Current AID policy denies recipients the many benefits of using agricultural chemicals originating from the U.S.

Agricultural Research

Mr. Chairman, as I noted earlier, AID programs are directed toward basic human needs. One of the highest priority programs is agricultural development. It is the driving force for economic growth in developing nations.

AID notes in its Congressional Presentation for FY 1989 that "Environmental stresses associated with poor management of natural resources and biological stresses, such as weeds, insects, drought, and plant and animal diseases, retard growth in the agricultural sector." This is true. AID also notes in its 25th Anniversary Issue of Horizons magazine that "Agricultural research and technical assistance to boost developing countries' food and agricultural production have always been part of the U.S. development assistance program to the nations of the Third World." This may be true, but that research has been almost entirely oriented to building the universities in the developing world, training future agriculturalists at land grant universities in this country, and supporting an international system of agricultural research centers. Little has involved the U.S. manufacturers of those agricultural products that have helped sustain our own agricultural production levels.

The provision of research can be enhanced and at the same time, help increase U.S. exports of agricultural equipment and chemicals, and expertise. Joint projects between AID and industry should be encouraged.

In the past 25 years, agricultural production has undergone a veritable revolution. U.S. manufacturers of agricultural products have had to keep up with this change. Isn't it time that AID adjust its program emphasis to bring to developing countries, the expertise and newly developed products of the U.S. manufacturers? Direct and early involvement of the U.S. private sector in Third World agricultural development is overdue.

Mr. Chairman, as I stated earlier, these are only a few specific points, involving one segment of the world-wide chemical market. I believe it is a good example however, of the opportunities which exist for creative, cost-effective actions that are available to us as a means of enhancing economic growth for our industry as well as meeting goals of AID.

Thank you again for this opportunity to comment on these issues.

Best regards,

Antoine Puech

Antoine A. Puech, Ph.D.
Manager, Export Services